The Primary Teacher

Special Issue on Innovative Practices

Vol. XXV No. II

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The Primary Teacher is a quarterly brought out by the National Council of Educational Research and Training (NCERT), New Delhi. The Journal intends to give the practising teachers and concerned administrators, authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc. offered at various centres in India from time to time. It also provides a forum for the discussion of contemporary issues in the field of education. The major features of *The Primary Teacher* are ·

☐ Educational policies concerning primary education
☐ Questions and answers ·
☐ States round-up
☐ Illustrated material for classroom use.

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Contribution : Articles and papers written by the school teachers either in English or in Hindi are welcome. Each published article would be paid for. Two typed copies of the articles should be sent in for consideration. Please send your subscriptions to the Head, publication Division, NCERT, NIE Campus, Sri Aurobindo Marg, New Delhi 110 016. The opinions expressed in the Primary Teacher are those of authors. This Journal merely provides a forum to express themselves, particularly those who have primary education background

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Special Issue on
Innovative Practices

THE PRIMARY TEACHER

This journal is an open forum for exchanging views and news about innovations in Primary Education and caters mainly to primary teacher-educators and curriculum planners on the one hand and researchers on the other. The gamut of interaction and intervention that can be shared through this journal is quite wide.

Major Thrust Areas

- Enhancement of quality of Learning
- Attainment of Minimum Levels of Learning (MLLs)
- Creating of joyful Learning Climate in the School
- Innovative Classroom Practices
- Problems and Issues in Primary Education, etc

The Primary Teacher provides a forum for practising classroom teachers, teacher-educators and curriculum planners to exchange their tested innovative ideas and strategies for effective classroom instruction

Subscription

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About this Issue

Teaching has lately been recognised as a profession. The teacher is the key figure in the educational system of whom the future of the child and that of the nation depends. Various commissions and committees have stressed the important role a teacher plays in the National development. National Policy on Education (1986) very rightly stated that no people can rise above the level of its teachers. POA of NPE (1986) also places responsibility of educational transformation on the shoulders of teachers by way of their involvement in the implementation of the NPE.

School effectiveness depends, among other factors, on the quality of a wide range of inputs, viz curricula, resources, time spent on school activities, teacher quality and motivation, classroom pedagogy, etc. Teachers are the essential actors in all these activities and therefore are instrumental for bringing about improvement in the system. Besides, the aims of education and objectives of curriculum can be fully realised only through the efficient services of a teacher who has the potential to inculcate positive values and develop the character of students by meeting their learning needs through curriculum innovations and other means.

The other side of the state of art of teachers, however does not present an altogether rosy picture. Teachers are criticised for not developing the minds of students to address the multiple needs of National development. Many a reason are advanced for the uncharitable criticism of teachers. Besides the critical need for effective pre-service and in-service education programmes for teachers and implementation in the classroom and school of what is acquired through in service programmes is a more crucial matter. Continuous endeavours are needed to alter or reform the methodology, process and content

of pre-service and in-service teacher preparation.

Teachers are practitioners and also researchers having their roots in their classroom experience. Classrooms serve as laboratories for them to conduct research, innovations and experimentation. Research and teaching enhance each other. Research contributes to a body of knowledge from the practices which are continually created and interpreted especially by the practitioners. Teachers as researchers can systematically reflect on their own teaching and classroom practices to understand and improve the same and can contribute effectively to the growth of professional understanding and practices. This process enables them to see through their own work and evolve better ways of doing the same things. Research insights and findings need to be communicated to other practitioners in the field for their scrutiny and use. It should, therefore, have its way to journals, magazines and conferences because feedback from fellow research colleagues, readers and scholars can provide useful information and be a powerful stimulus for rethinking and making further improvements in their research.

The National Council of Educational Research and Training (NCERT) annually invites from school teachers papers on innovations, experiments and practices successfully tried out by them. Summaries of innovative papers selected for NCERT award were invited from the awardees. These have been further scrutinised and edited for inclusion in the special issue of this journal. It is hoped that readers will find them useful and interesting. It will be appreciated if these innovations are replicated in the field by the readers to test their worthiness. The necessary feedback in this regard may please be provided to the Department of Teacher Education and Extension of the NCERT.

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Teaching of Mother-tongue through Creative Activities

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In teaching, use of innovative and creative approaches are a welcome process Teaching of the mother-tongue, which the child has already acquired from his/her mother, requires motivation and skill

Though the child acquires the speech from its mother so easily yet when it comes to reading and writing they find it hard and take two or three years to master the words Those who can not do so sometimes dropout from the school The author develops some creative methods in his school to solve this problem in teaching in Class I

Telugu script has round alphabets and has a distinct speciality in pronunciation There is very much similarity between many alphabets It is a language having endings with 'Aa' sound This is because the endings are with vowels though proceeded by consonants.

There are 56 alphabets The impact of local dialect, *arnamusvaram* 'o' and secondary syllables make it difficult for the child to learn mother-tongue

The Problem

The need is for devising creative activities to eliminate failures in the learning of language skills—listening, speaking, reading and writing in Class I especially to attain Minimum Levels of Learning (MLL) in the first standard It is possible to enhance the quality of language learning, kindling enthusiasm in the students by devising new activities, games and pictures.

Action Plan

Developing an activity, its execution in the classroom, preparation of materials, estimation of results, rectification of parts are all time consuming, taking at least one week for every activity.

The idea of effecting improvement in the teaching of language at Standard I level was conceived in 1991-92,

It took about one year to develop various activities Yet I could implement some of the activities even during 1991-92.

In 1992-93 I selected five groups of students, each comprising an outstanding student, an average student and a below average student The intelligent student used to devise the execution of the activity or game, while the innovative teacher coordinated and monitored their efforts Some times an innovative activity or game would fail at the execution stage revealing a number of faults which required rectification on the basis of experimental feedback

More time than is usually available for teaching of language in the school time table was required for reaching to try out the new methods of teaching Thirty minutes during lunch interval, another 30 minutes after the school in the evening were devoted extra for the tryout of these innovative techniques

Approach Adopted

The teacher had a school readiness programme kit with action songs, pictures, picture stories, alphabets (shapes) and some toys. He concentrated on school readiness programme to attract children to come to school.

Division of Alphabets

First a classification of alphabets was attempted keeping in view the peculiarity of Telugu alphabets and frequency in their use. Letters like ञ, च, ज, ठ, र were separated The remaining letters were classified according to their shapes and use

Thus it was possible to teach only 44 letters to the students in the first standard Due to similarity in shape they learnt the alphabets in lesser time than the time taken by the traditional method as they could recognise them easily Moreover, they were able to read, write and use the letters Thus the minimum levels of learning of 1500 and 700 words as recommended by NCERT and SCERT respectively could be attained To develop four language skills the following techniques were devised .

Preparation of Words with One Unit
By implementing the above type of division child should begin, reading words after completion of two alphabets. It speeds up with the continuation of units

In traditional method of language student starts reading words after completion of 56 alphabets By using this method, system of prolonged learning method of alphabets is avoided.

Colouring the Letters
To develop writing skill the figures from new papers are collected and a scrap book is prepared of these figures. On these figures child practices the colouring method. Then cards with alphabets in double line are prepared The children colour these alphabets By this activity they develop psychomotor skills in writing alphabets.

To support learning by this technique activities like letters in picture and shape similarities of alphabets with fruits, flowers and vegetables are prepared On some cards alphabets are imbedded in the picture itself. This technique when used in the class for the present experiment delighted the students very much

Evaluation of Learning
Many games were prepared by the author. Practice in the four skills was provided to the pupils and at the same time their performance with regard to these skills was evaluated

Alphabetic Clock
Take a square thick card board and make a hole in its centre Pass a rubber band through the hole fixing a small candle on the side alphabets are printed and a small stick on the other side to the rubber band Fix a match stick to the candle to function .as an indicator. Twist the stick fixed at the back and when it is released, the stick on the candle starts rotating over the alphabets printed at equal distance from each other. When the stick touches an alphabet, students recite it as oral drilling, helping them to recognise the alphabet.

Conclusion
Action songs, dominos, word cards, picture story cards, dialogues, games, models, etc. can be utilised to bring about qualitative improvement in the standard of students.

Though it is difficult to undertake such experimentation a teacher should not shirk from innovative teaching While continuing with the experiment,

rectification of teaching technology takes place continuously on the job like in action research. Sharing one's experiences with other teachers will benefit the experiment as well as other teachers The teacher, institutes and other extension agencies should extend co-operation to creative teachers undertaking such practical classroom experimentation. Whatever may be the difficulties, constant investigation should be the foundation for quality improvement in teaching. That is why every teacher should cultivate the habit of scientific enquiry with a firm belief to improve his own teaching so that there will be a general upgradation in the learning ability of students.

Realising this truth every teacher should work in his own sphere with a change of attitude and disseminate the results through conferences with teacher, news papers, journals and discharge his responsibility to bring about a change in the educational technology The experiment may be small but its results will bring about great changes enabling the process of education to make long strides on the plank of innovation and creativity

Education through Drawing

This article emphasises the role of a teacher in teaching different subjects like Mathematics, Environmental Studies and Moral Education through drawing

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The teacher plays an important role in the field of education While teaching the teacher should keep in mind interests, attitudes and skills of the students. The teacher should give priority to the sitting arrangement of students in the classroom. The sitting arrangement should be in such a way that the average students sit in the front row, below average in second row and above average students in the third row. This will enable the below average students to mix up very well with other students

Objectives to Be Achieved
To teach different subjects such as Telugu, English, EVS , Mathematics, etc through drawing

Human digestive system
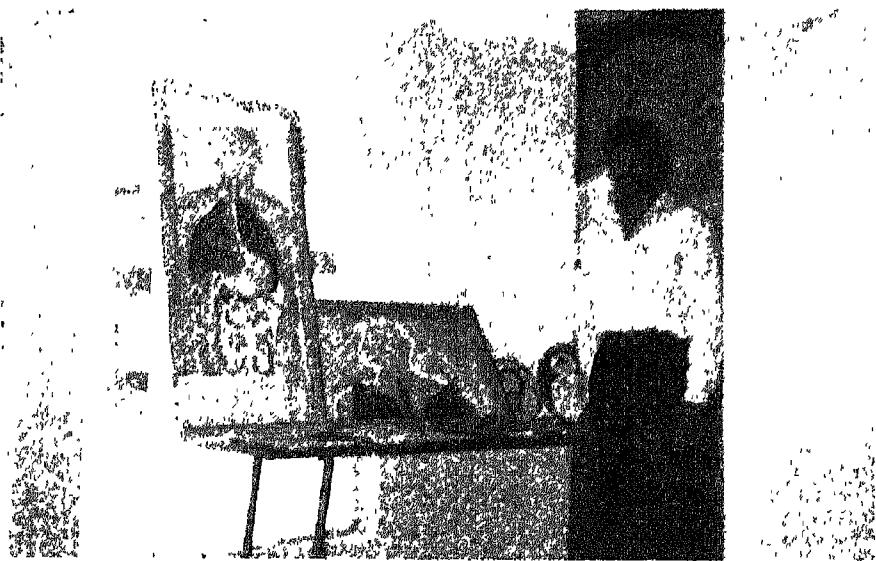
Teaching Alphabets through Drawing

Student in the Class I cannot adjust himself to the classroom environment. He can not concentrate on anything for more time. Teacher can attract the attention of student through figures which are familiar to him. Teacher can change the letter into a beautiful figure. Student has to identify the alphabet in that figure. Then he will be able to seperate the alphabet from the figure. The student tries to draw the figure and identify with zeal and enthusiasm. By doing so objectives of teaching drawing as well as teaching, alphabets through drawing can be achieved.

Giving Homework through Drawing

Normally first standard students will not pay interest in doing the homework. But the homework was given to draw the figures using different alphabets. In this way, students pay much more attention in completing the homework neatly. By giving this type of homework to the students the objectives of developing creativity, self confidence and understanding can be achieved.

Environmental Science I

Drawing plays an important role in Environmental Science-I. India is a secular country. There are people having different cultures, customs, religions and languages. Teacher through drawing can teach about different types of dresses of people, important places and national leaders of India. While teaching the lesson on means of transport, the teacher can draw the figure of train, bus, lorry, ship, aeroplane on the black board. By giving the idea of making these with match boxes, thread and gum, students can easily make the models of different means of transport.

In my school, I prepared models of church, mosque temple, etc using thermocoal, models of Lord Buddha and Ravindranath Tagore with Plaster of Paris. The students can try to make these models. Models will help them to remember what they learned in the classroom for a longer time.

Environmental Science II

Teaching Environmental Science II by lecture method cannot achieve good results. Curriculum of Classes III, IV, V have similar topics with slight changes. In multiple class teaching, utilizing the same type of activities and teaching aids can be used in these classes. Thus, the trouble of preparing different teaching aids for different classes will be reduced. For example for the lesson on Human Body, the teacher can draw the shape of the human body on the black board. By drawing so, the students can easily understand size and shape, location of heart, lungs, kidneys, respiratory system, excretory system, digestive system. To teach this lesson the writer made a model with thermocoal showing kidneys, heart, respiratory, excretory, digestive system.
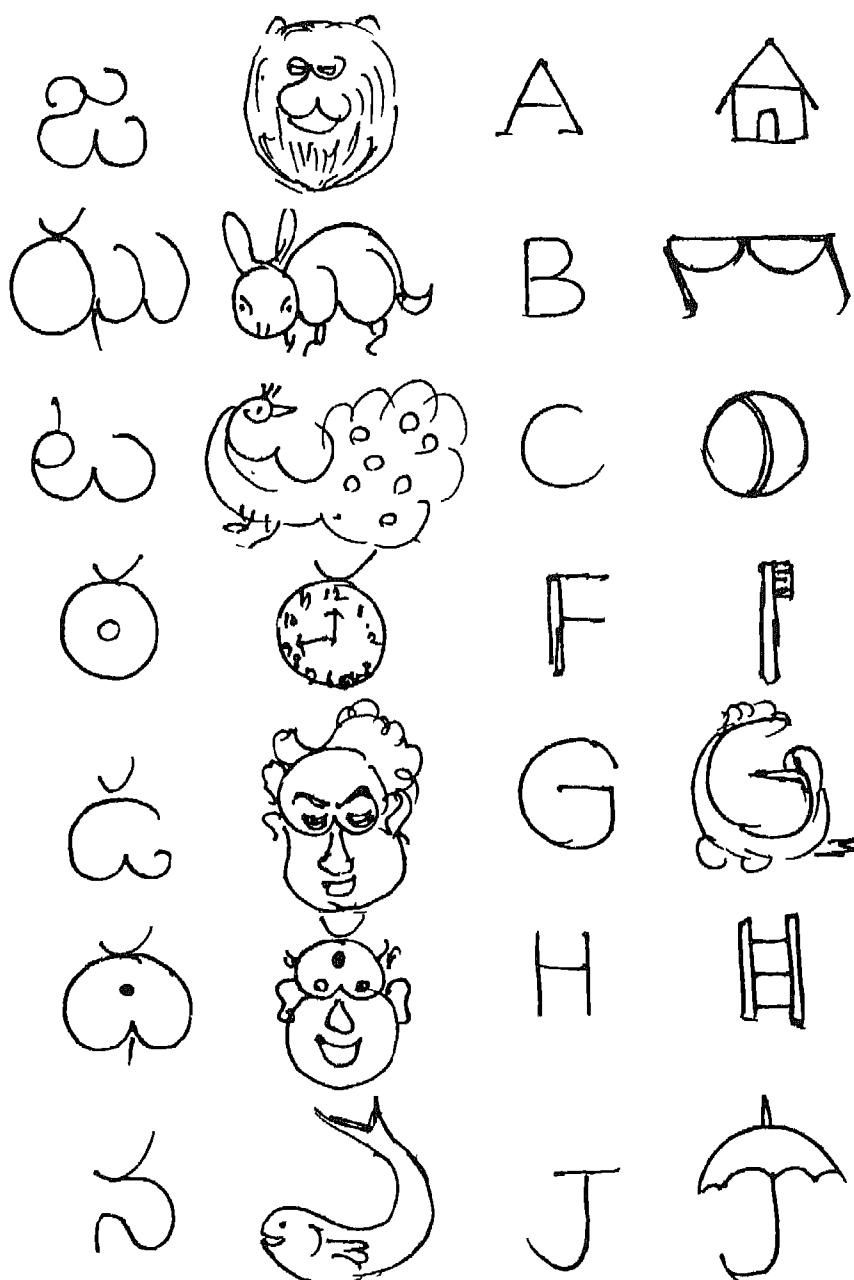
English alphabets through drawing
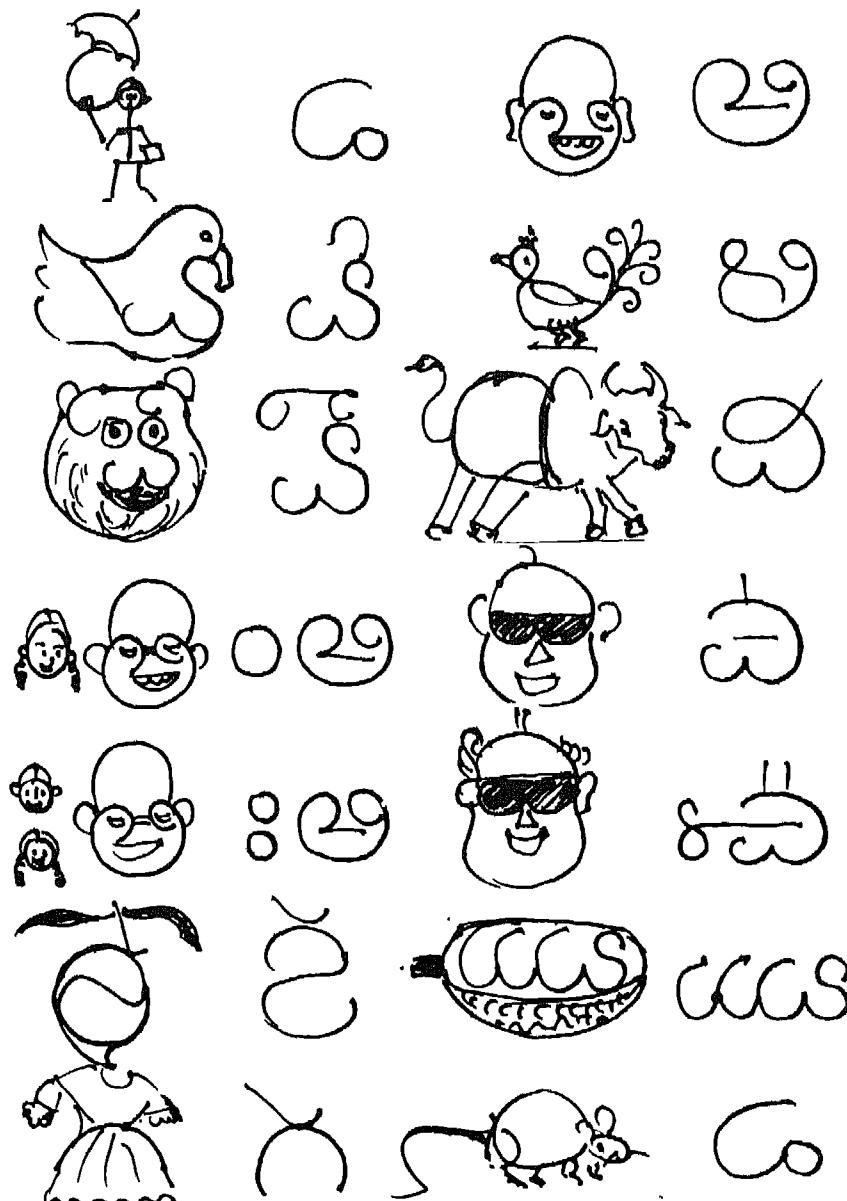
Telugu alphabets through drawing
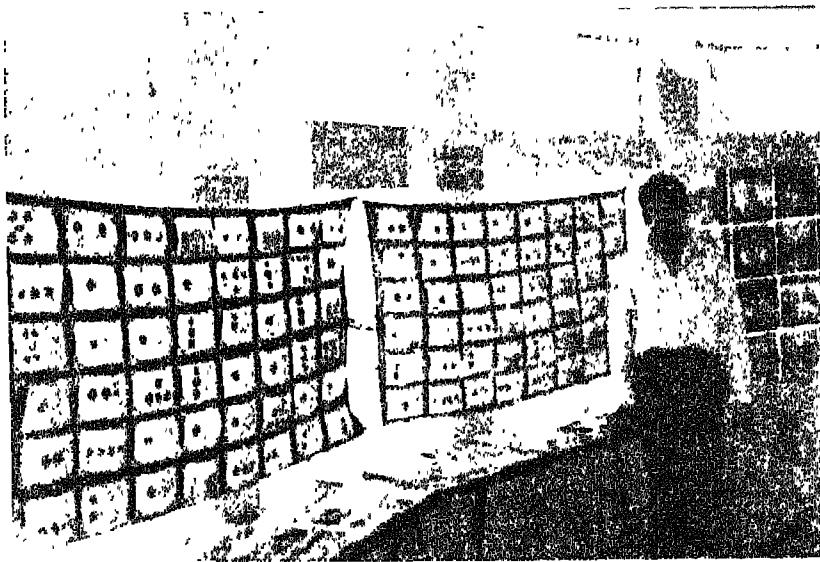
Exhibition of coins

By giving the knowledge of preparing different models with low cost or no cost material in the classroom, the student's creativity can be nurtured.

Mathematics through Drawing

Teacher can not teach Mathematics like Coordinate Geometry Addition, Subtrations Fractions can easily be taught through drawing

Moral Education and Civic Sense

Teacher can tell the stories bearing moral education to the students After telling the story, the teacher can ask the students to draw the known figures. Teacher can explain themes like national integration, election procedure, family planning, causes of poverty by showing various figures to the students.

Health Education

The teacher can teach about the uses of taking balanced diet, neatness, uses of vaccination for polio, typhoid, T.B. etc. by showing the charts.

Major Outcomes

1. While observing the drawing of teacher on the black board the students attain the scientific attitude and develop skill and imagination for drawing

2. Teaching through drawing takes less time when compared with other techniques.

3. Mental ability of the students will increase.

4 Students develop moral values, national integration and patriotism.

5. Students can understand the problems of the society easily through various drawings

Conclusion

Almost all the topics in all the subjects can easily be taught with the help of drawing. At the primary stage of education teacher can achieve good results of his teaching. However this depends upon the teacher's own interest, efficiency and creativity.

FORM IV
(see Rule 8)

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I, Puran Chand, hereby declare that the particulars given above are true to the best of my knowledge and belief

Sd/-
Publisher

Environment, Health and Absenteeism

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In this article the author tries to create an awareness among pupils about pollution in the environment and its effects, simultaneously, searching out the reasons of the spread of diseases and what preventive measures should be taken against these diseases

Absenteeism is moie during the months of August and October due to the occuirence of conjunctivitis and jaundice among the pupils Therefore preventing absenteeism among pupils as also incidence of these diseases among pupils and their parents is necessary. Another reason was to make drinking of pure water a habit with them

Objectives
1. To find out the reason of the spiead of these diseases and suggest pieventive measures foi the same
2. To find out whether there is any relationship between drinking water and occuience of the above mentioned diseases
3. To create an awareness among pupils about pollution in the environment and its effects.
4. To cultivate in the society practice of drinking pure water.

Sample
The problem mentioned above is seen among the pupils of Brahmanapalle village (tribal area) in Vedurukuppam Mandal in Chittoor District of Andhra Pradesh. Therefore, for the purpose of the present experiment five primary schools and five non-formal education centres were selected in the catchment area of this tribal village. In all 1000 pupils of both sex in the age group 5 + to 9 + were involved in the experiment

In August, 1994 it was observed that many pupils studying in the tribal school of this village (where I am

working) were absent. When I enquired the reason for their absence, the other pupils reported that conjuctivitis and jaundice were prevalent in the village and the absentees were affected by one of these two diseases. It was found that their parents were also suffering from the same diseases. Almost all of them complained of similar symptoms. The same complaint from different areas of the village continued upto the month of November.

It was doubted that the drinking water might be a reason for getting these diseases. This doubt arose due to the monsoons during those months. The rain water might have polluted the drinking water resources of the village.

A pre-test was conducted to find out the drinking water habits of the pupils. The primary school teachers and non-formal education instructors helped me in conducting the test among the pupils. The evaluation revealed that the pupils did not know anything about water pollution and its effect. Diseases caused by drinking polluted water and eating polluted food.

Classes 3 to 5 (Formal)
Stages III & IV (Non-Formal)
1. Factors that caused water pollution
2. Prevention and control of water pollution
3. Diseases and remedial measures (water pollution)

The above teaching items were dealt with in detail, leading to 'understanding' and 'application' of the knowledge they had received. They were asked to enlighten their family members also about the ill effects of using polluted substances.

Concepts
1. The physical, chemical and biological changes that occur in the soil, water and air and cause harm for the living organisms are called pollutions.
2. Pollution is caused by nature as well as by man.
3. Pollution is of 5 types :
   (a) water pollution
   (b) air pollution
   (c) sound pollution
   (d) soil pollution
   (e) other pollutions (radiation and thermal pollution).
4. Water is essential for any living organism.
5. Water is universal solvent. Any solid, liquid or gas if dissolved in water, pollutes the water.
6. If there is colour and taste for water we can easily say that water is polluted.

It was therefore decided to teach the unit on water pollution, control and prevention.

Tryout and Observations
By using the six learning principles of APPEP (Andhra Pradesh Primary

Education Project) the pupils were taught about water pollution, control and prevention.

Six Principles of APPEP

1. To create learning activities
2. To create individual, group and whole classroom activities
3. To make the pupils learn by doing activities.
4. To identify the individual differences
5. To use the local environment in the process of teaching
6. To create attractive classroom atmosphere

Classes 1 & 2 (Formal)
Stages I & II (Non-formal)

1. Introducing new words related to pollution control and prevention.
2. Definitions and meanings for the above new words.
3. Pronunciation and usage of the above new words.
4. Hints for improving personal hygiene and sanitary habits
5. Diseases caused by living in unclean and unhealthy environment.
6. Harm caused by irregular habits.
7. Rain water is mostly purified water
8. Water is polluted mainly due to 1. mixing up of rotten wastes and debris in rivers and lakes 2 industrial wastes are let out to mix up with water 3. increased use of fertilizers and pesticides in the field of agriculture

4 excreting in open places 5 non-availability of proper drainage systems 6 lacking cleanliness around the drinking water facility 7. adding germicides to water for killing harmful bacteria. 8. natural calamities like floods and cyclones, winds 9 non-availability of protected water supply in all the villages 10 mixing up of soil wastes with rain water and draining into water sources

9. The diseases that occur due to water pollution are· (a) dental fluorosis (b) conjuctivitis (c) jaundice (d) thoracic diseases (e) pulmonary diseases (f) rheumatism (g) diarrhoea

10. Apart from the above diseases the polluted water gives bad odour and change in the taste of water.

11. Preventive measures for avoiding water pollution are . (a) filter the drinking water (b) arrest the mixing of polluted water with drinking water resource during rains (c) avoid using water with harmful bacteria for agricultural purpose (d) proper implementation of Prevention and Control of Pollution Act 1974 (e) proper implementation of Central Ganga Authority 1985 Act (f) establishing protected water supply scheme in all villages (g) to protect sanitation and cleanliness in and around drinking water sources (h) unnecessary or excessive use of

germicides in drinking water should be avoided.

Soon after the teaching-learning activities were completed on the above teaching items, the pupils and their family members were observed on the following issues :

1. Whether they were drinking purified water.
2. Whether the utensils used for drinking water were clean.
3. Whether they were keeping drinking water resources clean.
4. Whether they were boiling and filtering drinking water during rainy season

The above mentioned observations were carried out from December 1994 to July 1995 and the observations revealed that they were taking water in a purified state as enlightened by the teaching-learning process. They were able to pervent water to a large extent.

A post-test was administered during July 1995. When the post-test scores were compared with the pre-test scores, it was revealed that there was considerable positive change among the pupils.

The absenteeism among pupils during August1995 to November1995 was once again checked It was reduced to a large extent when compared to the absenteeism rate in 1994. The complaints of conjunctivitis and jaundice were also reduced to a large extent The prevalence of diseases among the family members was also reduced

Findings and Conclusion

1. Children in the age-group of 5-6 and individuals in the age-group of 15-25 were easily affected by the disease.
2. The disease was more prevalent in the month of October.
3. Usually more boys and men than girls and women were affected by the disease.
4. Before understanding about pollution and its evil effects the disease was found in 59.4% children and 43.2% of their family members.
5. After understanding about pollution and taking preventive measures the number of persons suffering from the disease had fallen down to 14.85% among children and 15 3% among family members.
6. Percentage of children understanding about environment increased from 16.9 to 61.5%.
7. The attitudinal change was more in the age-group of 5 to 6 in the children and 45-55 years in the family members.
8. Disease = Pollution × imbalanced food-formula, was proved.
9. It is concluded that pollution of water is directly related to diseases which is indirectly related to absenteeism.

Test Question Paper

1 What are the diseases caused by water pollution?

2 What type of water is good for drinking?

3 What substance in water causes 'Flaoresis'?

4 Which industry causes pollution in Ganga?

5 What is the cause for "Acid Rains"?

6 What is the body part affected by sodium pollution?

7 Which type of power station has no pollution effect?

8 Which chemical spoils chlorophyll in plants?

9. In which area 'mist' will be more?

10 What type of rays affect 'cancer'?

Answers

1. (a) Diarrhoea
    (b) Jaundice
    (c) Conjuctivitis

2 Boiled and cooled water

3 Flurine

4 Leather industry

5. Due to sulphur-di-oxide and nitrogen oxide mixing up with environment

6 Kidneys

7 Hydro electric project

8. Sulphur-di-oxide

9 Industrial cities

10 Ultraviolet rays

Games in Mathematics

ABBASI BHAI MANJI BHAI PATEL

Mathematical education is an important part of education. The teacher can teach it through games In this article four different games have been prepared and described by the author to be used for teaching environment and mathematics.

Children like activity. They are interested in games and activities. In Maths, primarily we give them figurative knowledge These figures are lifeless for children so they do not show interest in them Without interest one cannot give knowledge That is why one should avoid learning by heart and repeating in writing to introduce figures to children. Due to this children become careless towards other subjects also.

Small kids are more interested in playing than in learning They like other activities more than learning. They like to be active instead of sitting idle. And so, in
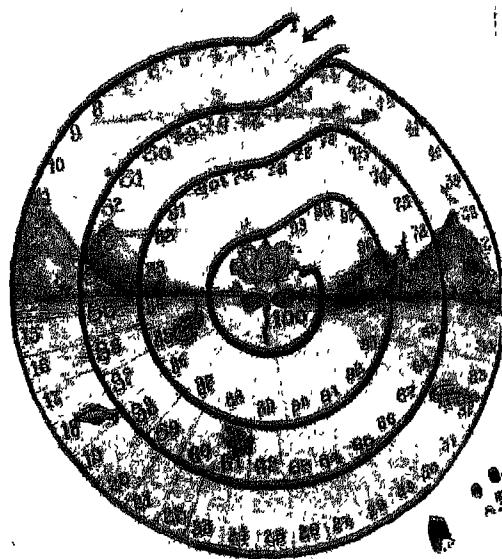
Game of flower

order to teach them counting from 1 to 100 and addition and subtraction of small figures "play way method" should be followed.

In child-oriented system of education teachers are expected to work along with the kids Children of 5 to 6 years of age of Standard I should get knowledge about their environment, colours, shapes of things, water, animals, etc. along with mathematical education.

In order to give the mathematical education of figures 1 to 100, additions from 9 to 100, subtractions from 1 to 100, mixed sums of addition and subtractions from 1 to 100, a project was undertaken in games of Maths. These games are original games.

Game 1 : Game of Flower
Objectives

To enable children.

— To get knowledge of 1 to 100 while playing
— To know their environment alongwith the figurative education .

Materials Required

Card paper, colour, brush, a piece of wood, four buttons of four different colours

Method of Preparing

First of all take a coloured or white card paper. On that paper draw the figure as shown in figure. And show water below and open sky and natural scene on the upper portion Make a circle as shown in figure and in this circle make 1 to 100 columns. Write 1,2, etc in chronological order from 1 to 100 Where 100 comes draw a picture of lotus, of a tortoise on number 94, a dragon on number 61, a fish on number 18, a water snake on number 85 and a crocodile on number 32. Thus a game of flowers will be ready in a card paper.

In order to play this game prepare a square of 1 cm × 1 cm from the piece of wood. There will be six sides of this square. Make one dot on one side, two dots on other side, three on the third, four, five, six dots on the remaining three sides. Make these dots with colour Take four buttons of four colours and use them as dice Thus, the game of flowers will be prepared.

Method of Playing

This game can be played by two to four children. There are four sides of this game. On its each side one child can sit and play this game. Each child should be given one button. Thus, four children should be given four different coloured buttons Then, take the dice prepared from the wood and put in a box and shake well and then turn it upside down and remove the box from the dice and see how many dots are there on the top. Then place the button according to the number of dots on the dice on the card paper on which the game numbers are written and flowers are drawn For example a child named 'A' will shake the box of dice and if number 4 comes (dots) on the dice the child named 'A' will place the button on number 4 on the game paper and all the children one by one will play in the same manner. Thus the game of flower will begin. In this game the watery animals are placed on some figures. So when the child's button will come on any such animal (fish, frog, tortoise, water snake or crocodile) then that particular animal will eat away the child's button. The child will have to start once again from number 1. Thus the button of a child that reaches the lotus first, saving it self from the water animals, will be the King. The child who comes second will be the Minister of the King. The child who stands third will be the Prime Minister of the King. And the child who stands fourth will be the Soldier. Thus, children will get the knowledge of 1 to 100 from the game of flower and will get the knowledge of their environment. They will also get to know that the lotus grows in water. .

General Knowledge

(a) This game is for the kids of 5 to 6 years of age.

(b) This game can be played with dice.

(c) Each child will be given a button.

(d) If the button comes on any water animal the child will have to restart from number 1.

(e) This game can be played by placing one child on each side of the game

(f) There are six sides of a dice. On each side dots are made with colour from 1 to 6. Dice is thrown after rattling it in a box

(g) This game can be played by two to four children.

(h) The child who reaches at the lotus flower first will be called the King; second one will be the Minister; third one will be the Prime Minister The child who reaches the lotus in the end
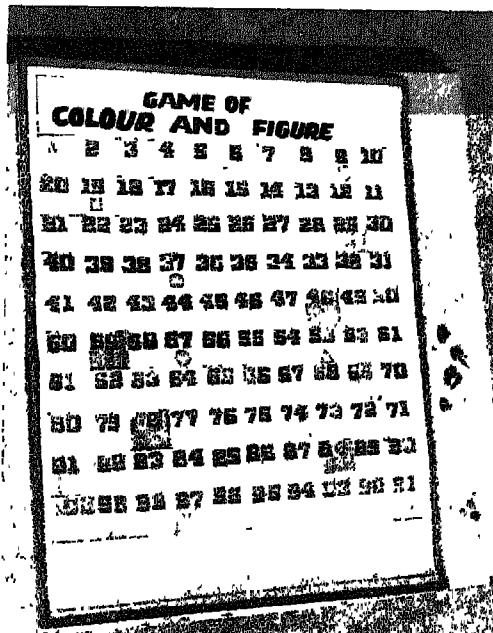
will be the Soldier Each child will try to be the King.

(i) In this game one has to be careful of the water animals

(j) Each child will throw the dice and whichever number comes on the dice that number has to be played by the child Besides learning counting from 1 to 100, children will learn about their environment also

Game 2 : Colours and Figures

Objectives

To enable children :

(a) To learn counting from 1 to 100.

(b) To add points obtained by them

(c) To get knowledge of figures like triangle, circle, rectangle, square etc. while playing the game

(d) To get the knowledge of colours while playing

Materials Required

(a) Card paper or hardboard.

(b) Water colour or oil colour

(c) Husk of peanuts or shells

(d) Four buttons of four different colours.

(e) Old calendar.

(f) Fevicol.

Method of Preparing

First of all take a card paper or hard board of 20 cm × 28 cm. Make vertical and horizontal lines of 6 cm on this board so as to make 100 squares.

Cut the number from 1 to 31 from an old calendar. Prepare number from 1 to
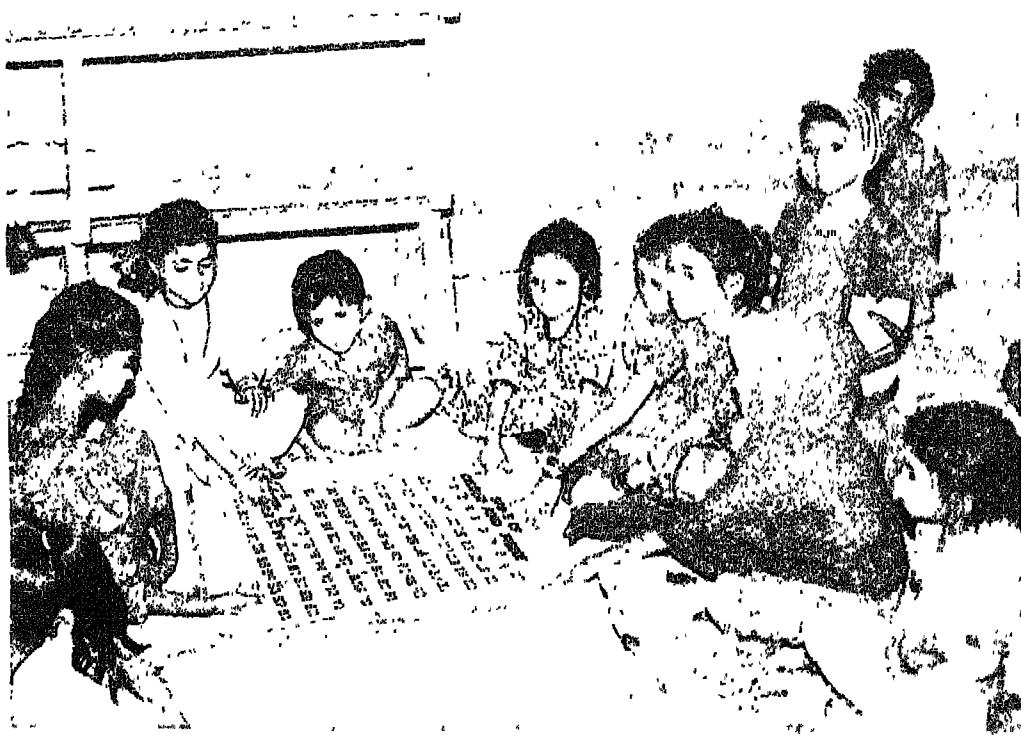
100. Stick the numbers on the board from 1 to 100 in chronological order from box to the last with the help of fevicol. Colour some numbers as shown in the picture Take the plain cards from playing cards and write the numbers of 5 and 10 on them. Make 25 cards of number 5 and 25 cards of number 10.

Information regarding the Game

(a) This game can be played by two children or a group of four children.

(b) In this game instead of dice four shells will be used.

How to Play with the Shells?

Children will take all the four shells in both their hands and rattle them and throw them on the ground. If one shell falls straight and the other three are upside down, then one gets one point, and if two are straight then two points, if three shells are straight then three points and if all the four are straight then 8 points. In case if a child gets 8 points, then he gets to play one more turn.

(c) The child who gets the highest points while reaching from 1 to 100 will be the winner.

1	2	3	4	5	6	7	8	9	10
36	37	38	39	40	41	42	43	44	11
35	64	65	66	67	68	69	70	45	12
34	63	84	85	86	87	88	71	46	13
33	62	83	96	97	98	89	72	47	14
32	61	82	95	100	99	90	73	48	15
31	60	81	94	93	92	91	74	49	16
30	59	80	79	78	77	76	75	50	17
29	58	57	56	55	54	53	52	51	18
28	27	26	25	24	23	22	21	20	19

How to Play this Game ?

Children of standard 1 can play this game. Place the game in the centre and let four kids sit on each side of the game or a group of kids on each side of the game. Thus each group or each child on every side should be given a button In all, four buttons will be on four sides In order to decide who will start the game, first of all the children will throw the shells one by one and who ever gets the highest number will start the game Thus, while playing this game children will get knowledge of addition from 1 to 100 and knowledge of colours and figures.

In order to enable the children to add points aquired they can be given one marble for each point. Then in the end of the game, each child will count the marbles and learn addition in an easy manner children of standard I easily learn addition of 1 to 100. Alongwith that they also learn about different colours and shapes of things And while counting the marbles children learn to speak the numbers 1 to 100 very easily

Game 3 : From Home : Go Back Home
Objectives

To enable children ·

(a) To get knowledge of addition and subtraction while playing.

(b) To know about their environment, different animals and their place of living

Things Required

(a) Card paper or hard board

(b) Water colour or oil colour

(c) 1 to 10 figures from an old calender

(d) Fevicol.

(e) Four buttons of four different colours.

Method of Preparing

First of all take a card paper or a hard board of 20 cm × 28 cm and prepare 100 boxes as shown in game 3. Arrange numbers 1 to 100 (one number in each square) as shown Stick them on each square from 1 to 100 with the help of fevicol

In the same card paper prepare the living places of different animals in different squares such as on number 39 a tree, on number 46 a jungle, etc

In the same card paper draw different animals on different squares. Thus a game of 'start from home and go back to home' will be ready on this card paper

Take four buttons for playing and give one button to each of four children. In all four children can play this game.

Cards for Points

Take 10 plain playing cards Also take 1 to 10 numbers from an old calendar and fix one number each on each of the ten playing cards with the help of fevicol. So 1 to 10 numbered cards will be prepared Start the game from No. 1.

In this game different types of residences are prepared, such as house, tree, water, hole and jungle.

How to Play this Game ?

First of all place the game on the floor or a table. Four children will sit on each side or a group of children on each side of the game Each child will be given a button. The buttons should be of different colours for the sake of individual identification. Take the cards on which 1 to 10 numbers are written and arrange them in a random order Then a child will pull out a card, whichever number is written on it will be the number to start the game The child who gets a card with the highest number will start the game and will get first turn.

While playing if the button comes on any one of the residences then one has to find out which animal's residence is it and then place the button on that animal Suppose, if the button comes on water then it is for the child to decide whether to place the button on fish ot tortoise which ever is more profitable. Then he will place the button on the tortoise because fish is on number 74, whereas tortoise is on number 89 which is nearer to 100. And if while playing the button comes on any residence then he places the button on the animal whose residence it is Suppose if the button comes on lion then the child, first has to find out the residence of the lion. As lion stays in jungle the child will have to play reverse as the lion is on number 50 and jungle comes on number 32 So 58–18 = 32 so the child will learn to subtract

In this game children will learn about environment, animals and addition and substraction

While playing whoever reaches number 100 first will be the winner and will get first position and who reaches second will get second position and so on

Game 4 : Birds

Objectives

To enable children
(a) To learn to subtract from 1 to 100.
(b) To know about birds
(c) To learn about environment.

Things Required

(a) Card paper or hard board
(b) Water colour or oil colour
(c) Brush.
(d) Fevicol
(e) Old calendar.
(f) Round chakra
(g) Coloured buttons

Method of Preparing

First of all take a card board of hard board of 20 cm. × 28 cm Then make 100 squares of 5 × 5 cms. Cut 1 to 31 numbers from an old calendar and arrange them in order and make numbers from 1 to 100 Stick the numbers in a chronological order from 1 to 100 on the squares of the card board with the help of fevicol.

In the lower part of the game draw pictures of all those birds whose different parts are drawn in different squares such as crow (26) duck (40) peacock (18)

parrot (13) crane (44) cock (20) sparrow (6) pigeon (26) and the game will be ready on the card paper

Use four different coloured buttons for moving forward

This game will start from number 1 In order to get the numbers take a round wooden or hard board of 6 cm In the centre fit a pully and thereafter also fit a safety pin on the wooden piece in the pulley. Fit the pulley so that the chakra can move round easily

Make 10 equal parts in this chakra. In each part stick 1 to 10 numbers with the help of fevicol, so that 1 to 10 in chronological order will be ready. Make an arrow to show the numbers on the chakra.

In order to play this game a child will rotate the chakra and when it stops, the arrow will show the number within 1 to 10 Whichever number the arrow shows that will be the number to be played. If the arrow is on No 7 so the child will move his button uptill 7 numbers. So the game will be ready

Information about the Game

(a) This game can be played by four or more than four children.

(b) In order to get numbers child will have to rotate the chakra.

(c) In this game, in some squares different parts of the birds are shown. In the lower part of the game the pictures of the birds are shown. While playing if any kid comes on any part of the body of any bird the child will think to which bird this part of the body belongs and will take his button on that bird's picture.

How to Play this Game?

First of all place this game at a convenient place. On each side of the game one child or a group of children will be seated Each group or each child will be given one button of a different colour Each child will rotate the chakra. When the chakra stops rotating the arrow will show a number and the child has to play according to that number.

After giving the buttons, the kids should be asked to rotate the wheel one by one. As soon as the wheel starts rotating the arrow will show a number. The child will have to move the button from number 1 to the number shown by the arrow.

While playing if the button comes on any part of the bird then the child will have to recognise the bird and take the button to the bird's picture and see which number is shown below the picture and play the game according to the number shown. Thus the children will learn to play games as well as the knowledge of substraction, about parts or the body of the birds, colours, shapes, etc.

Thus, different games can be prepared which can be used for teaching about environment and mathematics.

Comics : A Powerful Graphic Aid for Slow Learners

Sailaja Kumar N

People usually look at comics as trivial reading stuff for children However, it can also be a powerful learning aid for the child.

"What we want is to see the child in pursuit of knowledge, and not the knowledge in pursuit of child" — G B Shaw

Education is an important social activity, a system closely bound with intellectual, economic, cultural and emmotional life of the human race. A human being is gifted with faculty of thinking which is considered as one of the greatest reasons for his growth and development Education makes him more logical and scientific in attitude.

To educate the students, a teacher should bear in mind the following principles of teaching. Teaching is a triangular process. The focal points of this process are the teacher, learner and the subject matter.

1. The principle of aim There should be a specific aim for every lesson. Since without an aim a lesson would fail to achieve the goal.

2 The principle of activities of learning by doing Teaching is ineffective if the learners do not actively participate in the learning process

3. The principle of linking with actual life and other subjects . Good teaching requires that knowledge learnt must be essentially linked with the requirement in life and if posible correlate with the other subjects which the learners are studying

4. The principle of interest or motivation : Motivation is the arousal of desire to learn. It is the duty of the teacher to keep the interest of the taught aroused.

5 The principle of diagnostic and remedial teaching : Good teaching diagnosis difficulties and suggests remedies. Early diagnosis of the short comings of the learners enables use of remedial measures in time

With the knowledge of the above mentioned principles as teachers what do we want our students to learn? The answer is not a simple one. But we can say that we want our students to learn about the world, its people, animals, plants, etc. For this the children should have a direct first hand experience. Classroom teaching will be excellent if a teacher could arrange direct first hand experience for each and every topic. But this is nearly impossible. So we should provide them with some other substitute experience to accelerate learning. How closely the substitute experience resembles the direct first hand experience decides the effectiveness of learning The substitute experience may be provided in various ways, i.e. we can use TV, films, radio, models, specimens, etc. Like this several audio visual aids were invented due to progress in Science, and Technology in 20th century. These aids help the students to learn more and more without much help from the teacher. So self learning material packages can be used to solve the problems of knowledge explosion.

Audio Visual Media

Various methods are used for the instruction of different subjects. So it is possible to make use of a wide range of audio visual media to increase the effectiveness of the teaching method. As the name implies an audio visual medium can be used as a vehicle through which a message can be conveyed to learners. It mediates between the teacher and the learner.

Here sensory experience forms the basis of knowledge. There are five senses. Visual (eyes), Aural (ears), Olfactory (nose), Gustatory (tongue) and Tactile (skin) and they are called as 'the gateways of knowledge'. Sensory experiences are concrete experiences. Though all the five senses are important, stress is placed on the aural and visual senses because they are widely involved in classroom situations Cominius was the first to introduce pictures in books. Pestalozzi advocated the use of objects before words. Today audio visual technology dominates the entire world of teaching and learning. "More learning, quick learning and longer retention" is the slogan of the audio visual technologists.

Audio visual aids fall under two broad categories — aural aids and visual aids. Visual aids can be split up into two, projected aids and non-projected aids In projected aids the images are projected

on a screen with the help of a projector e g film, slides, transparencies, etc. Non-projected aids form the bulk of audio visual aids e.g. charts, diagrams, graphs, maps, etc.

Non-Projected Aids

Graphic aids : They are powerful media for teaching and learning They visualize and simplifies the ideas and facts. Conventional symbols are used in them. They represent a judicial blend of drawing pictures and words. They are usually two diamentional and many of them can be projected through an opaque projector—epidiascope Here are some examples for graphic aids — charts, posters, diagrams, graphs, cartoons, comics, photographs, pictures, etc.

Cartoons : A cartoon is a metaphorical presentation in the form of a picture or a sketch A cartoon conveys effectively a single idea

Comic : A comic is a strip of cartoon showing a continuous theme. They are highly useful in pre-primary and primary classes. Cartoons are colourfully illustrated to convey the ideas instantly. Comics are popular now a days. It is hard to find a newspaper or a magazine without a column meant for the comics or cartoons. Even the audio visual medium — TV is not spared Cartoons are screened every day exclusively for children. Children's reading materials like Tinkle, Amar Chitrakatha, etc. are sold like hot cakes The children show a lot of interest in reading and enjoying these magazines Why do children like and enjoy these comics? What attracts them towards these books? Comics are good for casual reading. This gives a lot of freshness and variety to the kids Children understand the story illustrated quickly. The retention of the knowledge is also deep.

Taking into consideration the positive aspects of comics, we can try out its application in our classes The most significant thing is that the slow learners benefit a lot.

A Word about Slow Learners

Normally slow learners have adjustment problems in regular classes. They lack motivation to learn either because their background has been too deprived or learning attempts have received no suitable encouragement or lack of the reinforcement by the teacher. They become failure oriented because of repeated defeats and thus no longer believe themselves capable of learning. They fear and lack ability and confidence to initiate new activities. The material they are assigned has not been made meaningful to them, so they have little purpose in learning it. They suffer a lot of humiliation. So they deviate from their

classmates and school work. As a result all teachers face the problems of these children who lag behind other children in school work

Slow learners if tackled properly can improve their achievement and come up to the level of other students in the class. There are many methods devised to handle them. The use of graphic aids boost them a lot And the comics and cartoons fetch a good result

Slow learners generally pick up well when the topic is repeated So when they go through the comics, first the pictures linger in their mind than the words Later they associate words with the pictures This helps them a lot in memorizing and re-producing them. Our teaching should not be examination oriented. Instead we should help the child to gain knowledge, ability to read, cultivate reading habit, wipe out varbalism, improve vocabulary, gain confidence, etc

Method of Preparation

Comics can be prepared irrespective of the subjects. To make the topic more interesting and lively, it can be shaped in the form of a story. Through a story the facts can be conveyed easily. Stories remain in their minds for a long time.

Select the topic to be transformed into a comic. However, dry it is, it can be moulded into a story. Characters in the stories are imaginary. Based on the story we must prepare the script. We should bear in mind that the language used is simple and upto the standard of the children. Based on this, script illustrations are prepared. The illustrations should convey the facts through proper expressions.

Each scene should be in a different box. To add the effect colours should be used. We can use any colouring material. But the best suited is poster colour This gives an impression of eveness and brightness Bright colours attract the young mind. Along with the drawings, dialogues are given in balloons. Dialogues are written in capital letters. This enables the children to read the material without any difficulty. At the end of the comic, add the moral of the topic also.

For the convenience of the young readers, a glossary is attached at the end of each comic section. Words should be arranged in the alphabetical order. This helps them to find the meaning of the words easily. This way they develop the habit of finding words and their meanings from the dictionary.

Time to Provide Material

Once the teacher finishes the lesson and exercises, she can give the comics to the children for reading. She can keep the comics in the form of a book or can display them on the bulletin board. Allow the children to read them as many times

as they want A but a child reads the comics once or twice, grasp the content and moves back or tries to help the other children. Average children and slow learners take more time to understand Teachers should let them have the comics as long as they want Allow them to read the comics at their own pace The comics give them needed reinforcement of the subject.

Evaluation of Knowledge Gained

It is very important that we must know the outcome of the work For this, a teacher should prepare questions based on the work. These can be asked orally or written on paper

From the answers the teacher can evaluate their knowledge From this she can also find out the need for further improvement of her work, areas of difficulty and the remedial measures to be adopted.

Advantages of Using Comics

— Motivate the children in learning.

— Provide them freshness and variety.

— Appeal to students of varied abilities

— Give needed reinforcement

— Cultivate reading habit

— Improve vacabulary

— Improve their spoken language and ability

— To get the maximum result, the script prepared can be used for dramatization This helps them to learn through activity

— Increase retention.

Conclusion

Reinforcement of the lesson is done by making cartoons and comics This helps the children to improve their fluency in reading. They are also inspired to read newspaper and other small story books.

To conclude the words of former Prime Minister Shri Rajiv Gandhi from the speech given by him on New Education Policy. "No system should remain same for ever It requires modification with the passage of time."

Script I
Subject : *Science*
Topic : *Deforestation*
Standard : *IV and V*

Examples of a script and teaching it through pictures are given below :

We live on the planet called earth. Once the land was covered with lot and lot of trees, shrubs and herbs. As the time passed we the human beings started dominating the earth. For our comforts we do a lot of harmful things. One of them is cutting down of trees. This resulted in the destruction of precious forests. This is called deforestation)

1. The picture of quiet jungle can be shown. All the trees, animals, birds live there in peace and harmony. The birds are chirping, some animals are playing, some are sleeping.

2. A group of men are coming to the forest with axe, saw and other tools.

3. They stop at one place and observe the area and the trees.

4. The Head Man (Leader) : "These trees are very good and strong. We shall cut down a few of these today."

5. (Hearing this one of the trees whispers to the king of the trees) "Sir, they are planning to cut us down. Please tell them not to destroy us."

6. The Tree King · "Yes, I shall do that. I shall request them."

7. The Tree King to the headman : "Sir, please do not cut us down. We are very useful to you."

8. The Headman : "Yes, I know. But I want the wood. I will sell the wood and I will become rich. That is my aim "

9. The Tree King . "Please do not cut us down This act of yours will destroy the forest. Many birds and animals will become shelterless "

10 The Headman "I don't care."

11 The Tree King "Please think again. When the forest is destroyed, it doesn't rain and the weather changes too "

12. The Headman · "I don't care."

13. The Tree King . "This causes soil erosion and the land dies" . . . .

14 The Headman (in anger) "I said I don't care ! (He then turns to his men) Cut down the King of the trees first He is trying to teach me " (The men cut it down The tree falls with a loud nois and the men laugh).

(Nc   hey cut down all the trees (This repec   After a few years, the forest turns into barren land Birds have no place to make nests Animals have no shelter and they die too.)

Result

Men (Farmers) . "No rains Our crops will dry " (showing the dry land) Men in cities with sky scrapers : "Oh! What a heat, not a tree around and no shade also."

A man : "We should start planting trees " Afforestation protects the earth and life on that and it starts   . ..

Moral : We should not destroy the nature. Protect it.

Glossary

1 Afforestation	–	Planting many trees
2 Axe	–	A cutting tool
3. Barren	–	Unproductive (here dry land without any plants)
4. Chirp	–	Sound made by birds, insects.
5. Deforestation	–	Destruction of forest
6 Saw	–	A cutting tool with teeth
7 Sky scrapers	–	Very tall buildings.
8. Soil erosion	–	Removal of soil by wind or water.
9. Weather	–	The state of atmosphere in regard to heat, cold, etc.
10 Whisper	–	Speak in a low voice.

Worksheet 1

Answer these questions

1. Name the planet on which you are living?
Ans . _____

2 What is deforestation ?
Ans _____

3. What happens if you cut down the trees ?
Ans . _____

4 How are the trees useful to us ?

Ans . _____

5. What is afforestation ?

Ans . _____

6 What will you do to protect the earth ?

Ans _____

Worksheet 2

State *Right* or *Wrong*

1. Forests are our wealth.
2. We should cut down the trees.
3. Soil erosion kills the land.
4. Roots hold the soil and prevent it from washing away.
5 We must protect the earth.

Script II
Subject : *English*
Lesson : *The Camel and the Cunning Fox*
Standard : *III*

1 Once upon a time a lion lived in a thick jungle with his three ministers

2 They were a leopard, a wolf and a fox

3. One fine day a merchant was crossing the forest with his camels.

4 One of his camels fell ill and couldn't continue its journey

5. The merchant left the camel there and proceeded to his village

6 The lion's ministers happen to see the camels on their way to the cave. They said —"Don't stay alone here. Come with us "

7 They took them to the King.

8 The lion—"Welcome to my den You are my guest You can stay with me peacefully."

9 As days passed the lion started liking the camel and made him his minister.

10. The lion's other ministers did not like this.

11. The leopard, the fox and the wolf started hating the camel.
They said—
Leopard : "He is not clever He is so ugly."
Fox : "He is not brave "
Wolf . "He is not strong or beautiful."

12 But he was honest and the king liked him

13 Leopard: "The lion is very fond of his new minister. He doesn't love us now So he is our enemy "

14 One day the lion fell ill
He said, "I am not well. I am feelling very hungry I cannot go out to hunt. Please get some food for me.. ....Camel you need not go for hunting You can stay with me."

15. Leopard, Fox and Wolf : "We shall go and hunt and will bring food for you."

16 Fox (an idea struck the fox) "Let's not go and hunt. Instead we shall kill our enemy, the camel."

17. Leopard and Wolf—"But how?"
18. The fox whispers the plan to them.
19. Wolf and Leopard : "That is a good plan."
20 In the evening they are coming back to the cave. They are looking sad.
21 Wolf, Leopard and Fox : "Sir, we hunted all day, but got nothing."
22. Lion : "Oh! I am dying of hunger."
23. Fox : "You are all hungry. Please kill me and eat my flesh. I'll give my life to save you all."
24 Leopard and Wolf : "Not at all."
25 Lion : "I will not do that "
26. Leopard to Fox · "You want to save us but you have a small body. And your flesh is not enough for us."
27. Wolf : "Please kill me. Let the lion eat my flesh. I'll gladly die to save him."
28. All : "No!"
29. Lion · "No, I will not kill my faithful ministers to save my life."
   (Poor camel did not know the aim of his enemies.)
30. Camel : "Sir, please kill and eat me" . . .

Before the lion could answer the three faithful ministers pounced on him and killed him.

Lion : "No !"

Moral : Think before you leap.

Glossary

1. Aim   : Point at something
2. Enemy   ; One who opposes
3. Honest   : Sincere
4. Ugly   : Not beautiful, unpleasing
5. Whisper : Speak in a low voice

Worksheet I

Cross the wrong word

1. The fox is a cunning/gentle animal
2. The lion loved/hated the camel
3. The three ministers planned to kill/save the camel.
4. At the end the three ministers killed the camel/lion.

Worksheet II

Who said to whom?

1. "Welcome to my den You are my guest. You can stay with me peacefully".
2. "Hey! We will not go and hunt. But we will kill the camel and eat.
3. "I shall give my life to save you all".

MORAL · THINK BEFORE YOU LEAP

Script III
Subject : *Science*
Topic : *Our Food*
Standard : *III*

1 Mother . "Ramu go to bazaar and buy these things " (Gives the list)

2 Ramu : "Yes Mom! Shyamu come let's go."

3. Shyamu (On the way) "Where is the money?"
   Ramu "Safely in my pocket "

4 In the market—at the vagetable shop
   Ramu · "What should we buy?"

5 Suddenly a carrot started talking
   Carrot "Pick me up I'm quite fresh My master used good manure to grow me I am rich in Vitamin A."

6 Hearing this other vegetables also started talking "Eat me! I've Vitamin C, we are rich in iron" . . . .

7. Shyamu : "How nice I feel like buying all the vegetables."
   (then they go to the provision store).

8. Ramu . "We want rice " (Then rice raised its voice.)

9 Rice . "Buy me I'm rich in Carbohydrate
   Dal (Pulses) "We can build your body We can make you as strong as Bhima. We are rich in Protein."

10. They bought rice and dal and went to the butcher

11. The Shopkeeper · "Buy meat, chicken.. they build your body." (They turn to buy eggs)

12. The Shopkeeper : "Sunday ya Monday *Murgi ke Unde*" . .
   Ramu · "Give a dozen eggs."

13. Shyamu : "Come let's go home."

14. Then a milk packet from the shop calls them—"Come here."

15. Shyamu . "But my mother bought milk in the morning."

16. Milk : "I'm the strongest in the world. I've all the nutrients. I am a complete food "

17 The lady in the shop : "Buy ghee, cheese."

18 Ramu "Give me cheese."

19. Ramu . "We must buy fruits. Mother wants to make fruit salad."
20. Shyamu . "Ok. Fruits have vitamins and minerals. Buy apple, grapes" . . .
21. Pappaya : "Buy me. I'm rich in all vitamins."
22. Shyamu · "We've a big tree behind our house and we love pappaya."
23. Pappaya : "Oh!"
24. Shyamu · "Come let's go" (going)
25. (At home) Mother : "Any balance?"
26. Ramu : "We were so excited at the market. We spent all the money."
27. Mother . "Did you eat chocolate ?" Ramu · "No mum, we know that chocolates spoil our teeth " (going to play with Shyamu)
28. Shyamu : "Where is my racket ?"

Moral : Food contains nutrients. Eat balanced food.

Glossary

Manure   —   Any substance used to fertilize land e.g.: Cowdung

Provision Store — A store of food items

Spoil   — Go bad

Voice   — Sound of a living thing e.g. , Man.

Worksheet

Fill in the blanks

1. Carrot is rich in vitamin_____,
2. Pappaya contains all the _____.
3. _____ is a complete food.
4. Iron is present in _____.

State *right* or *wrong*

1. We must help our parents.
2. We must keep our money safely.
3. Chocolates cause bad teeth.
4. We must eat all kinds of food items
5. Dals are rich in protein.

Answer these questions

1. Name some milk products.
Ans. _____
2. Milk is a complete food. Why?
Ans. _____
3. Name the nutrients
Ans. _____
4. Would you like to make a kitchen garden?
Ans. _____
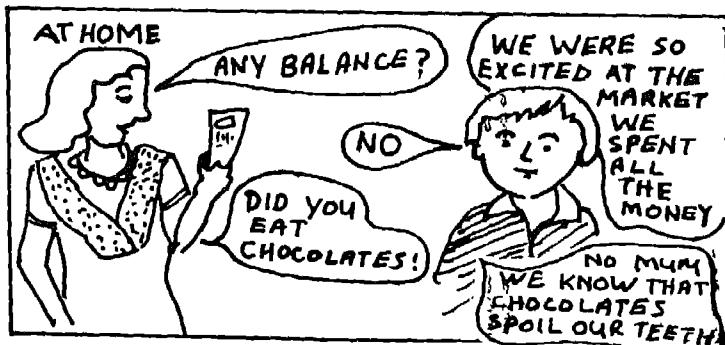
Teaching English through Rhymes and Poems

NIRANJANI V

Language is a means of communication and interaction. It is necessary to develop the basic language skills, i.e listening speaking, reading and writing This can be done in primary stage through rhymes and poems

Language is different thing at different times according to the actions of the speakers, listener, reader and writer. One person usually does all these things at onetime or the other Teaching of any language is difficult because all languages consist of a complicated series of skills for their speakers, listeners, readers and writers.

Language is a means of communication to interact with each other and is necessary to develop the basic language skills i e. listening, speaking, reading and writing and communicating with each other. Language is a tool and we must learn the most effective ways and methods of using it The use of language requires a great number of activities to be carefully integrated. Teaching a language like English is a difficult task. This is partly because of the large number of words and partly because of the many ways they can be put together to mean so many different things

At the primary level, language occupies a pivotal place in the curriculum

The basic skills acquired through language learning facilitate learning of concepts in other areas too. Moreover, in shaping personality of the child and in all his/her effective transitions in the day-to-day life situations, the nine basic language skills namely, listening, speaking, reading, writing, comprehension of ideas

(through listening and reading), functional grammar, self learning, language use and vocabulary control play significant roles

Objective of Language Learning.

At the primary stage, the main objectives of language learning are to be able to :

- listen with understanding
- speak effectively in both formal and informal translations
- write neatly with logical sequence and creativity
- comprehend ideas through listening and reading
- use grammar functionally in various contexts.

Teaching Learning Strategies

A variety of interesting activities in the form of narration of events, peer group discussions, story telling, drama,dialogue, question- answers, quiz competitions, riddles, word play, debates during co-curricular programmes and functions and songs are organized for making learning a joyful activity. Self-learning skills and functional use of language also are to be developed by encouraging the study of interesting childern's books, picture dictionary and peer group activities. In order to make English language classes lively, we have made children of classes I and II learn English through rhymes and poems.

What is Rhyme ?

Rhyme is identity or close similarity between stressed sounds in corresponding places. The most widely used device for securing musical effect is rhyme. There are three kinds of rhymes - *middle rhyme* or *assonance, end rhyme* and *beginning rhyme* or *alliteration*. When we say rhyme, we mean rhyme accruing at the end of line as in - --

'Sweet is true love tho' given vain,
And
Sweet is death that puts an end to **pain**'.

Rhyme becomes a noticeable and often delightful feature when poetry is read aloud. Rhyme draws attention to the verses as they are read and gives form to the stanzas. It may also emphasize the meaning of the rhyming words.

Rhymes are the coins of emotional merriment

Rhymes are meant to enjoy wherever they are sung or recited In an English classroom, besides being a diversion or a break from routine activities, rhymes also lead to English language proficiency in some ways by getting the learners use English in the course of recitation. Rhymes can be used to improve learner's command of a particular item or items of language—sounds, vocabulary, spellings, grammatical items or functions and of course the value education They can be used to provide the learners with

opportunities to use language rather than simply practise it. That is, they are concerned with fluency rather than accuracy They are useful as a means of re enforcing vocabulary

Rhymes are the magic wands in the hands of a teacher

Rhymes are effective teaching aids for primary children of classes I and II They help in the development of right attitudes and manners. They help in the integrated teaching of various subjects. The power that rhymes yield in the development of a child's language ability and psyche is unbelievable. It involves every child of the class A child through rhymes acquires the concepts of correct pronunciation and vocabulary. Positive impulses can be inculcated and reinforced while reciting, singing and enacting rhymes

The rhymes used to make pupils learn English language in classes I and II alongwith their teaching/learning points are given below

	Teaching/learning Points
1. I am a Little Tea Pot	New words, synonymes, rhyming words and word web
2. Old Mc Donald	Names of animals and the calls they make, vowels and farms
3. It's Fun	New words, verbs, nouns, past tense
4. Auntie Monica	Grammar point 'ing', article 'an', facial expressions, body movements, voice modulation
5. The Silent Letters	A game in silent letters, new words
6. Politeness	New words, value education

Rhymes are effective teaching aids for primary children

They play a vital role in the learning and teaching process. The application of this method demands proper planning and organisation of the class. The outcome of this innovative practice is as follows ·

1. Enjoyment of the rhymes, rhythm and its musicality.

2 Diversion from monotony

3. Allowed active participation of the pupils

4 Made the class lively.

5. Helped in the development of right attitudes and manners

6. Helped in the integrated teaching of various subjects along with English language

7 Helped in the development of the child's language ability in speech and in concept

8 Teaching different concepts became easy.

9. Pupils could express their feelings easily.

10. Pupils could co-relate the action with words

11. Pupils learnt the teaching points faster by imitation and repetition

12 Pupils participate freely without any inhibition.

13. Pupils learnt correct pronunciation.

14 Pupils memorised rhymes easily and quickly to recite the rhymes happily.

15. Pupils through rhymes acquired the concepts of correct vocabulary.

16. Positive attitudes were developed and reinforced while reciting and singing rhymes.

17 Hesitant and weaker children became active.

18 Pupils developed a sense of discipline and group dynamism

19 Motivated the children to participate with enthusiasm and cheerfulness.

Thus to conclude rhymes bring teacher and pupils closer to one another in an agreeable way and help to ease the process of learning and teaching. In group or team recitation. rivalry and co-operation go hand in hand.

Rhymes are amusing as well as profitable.

Children not only enjoy recitation, but also gain a lot of confidence and facility in using English language. All children naturally recite rhymes hence the teacher has utilised this method as medium in making the children learn the English language.

Rhymes have rhythm where children participate actively involving everyone. Rhyme ignites the spark of learning.

Learning that takes place through pleasure has a lasting effect on the children Recitation is a useful activity in which pupils participate freely. It is a useful tool to help children acquire concepts in environment through a natural medium

Rhyme 1

I AM A LITTLE TEA POT

I am a little tea pot,
Short and Stout,
This is my handle,
And this is my spout.
When the water is boiling,
Hear me shout,
"Just lift me up
And pour me out."

Teaching Points

1 Vocabulary taught and learnt --- Stout, Spout, handle

2 Synonyms : Stout and fat

3 Rhyming words : Short, Stout
Spout, out

4. Word Web

Heat / Steam

Condensation ← Water → Evaporation

Vapour/Cool
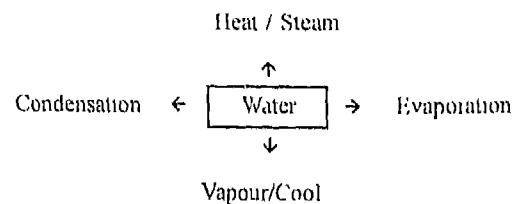
The word web helps a child in recalling his vocabulary and it also enriches it

Rhyme 2

OLD MC DONALD

Old Mc Donald had a farm
In his farm he had some chicks,
    Hi Ya Hi Ya Yo   .
Here a cluck, there a cluck, everywhere
    a cluck, cluck   .
Old Mc Donald had a farm,
In his farm he had some ducks,
    Hi, Ya, Hi Ya Yo ..
Here a quack, there a quack, everywhere
    a quack, quack .   .
Old Mc Donald had a farm,
In his farm he had some pigs,
    Hi, Ya, Hi Ya Yo . .
Here a grunt, there a grunt, everywhere
    a grunt, grunt   .
(Continued with different animals and the sounds made by them)

### Teaching Points

1. Name of the animals and the calls they make are learnt.
   Ducks — Quack,   Hens — Cluck
   Pigs — Grunt,   Horses — Neigh
2. The rhyme is modified to teach vowels like
   Old Mc Donald had a farm
   a, e, i, o, u (and continued)
3. Child learns about 'farms'
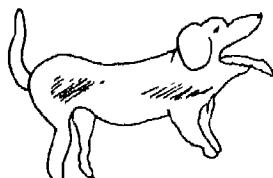
Rhyme 3

IT'S FUN

It's fun to be this,
It's fun to be that,
To leap like a lamb,
To climb like a cat,
To swim like a fish,
To hop like a frog,
To trot like a horse,
To jump like a dog,
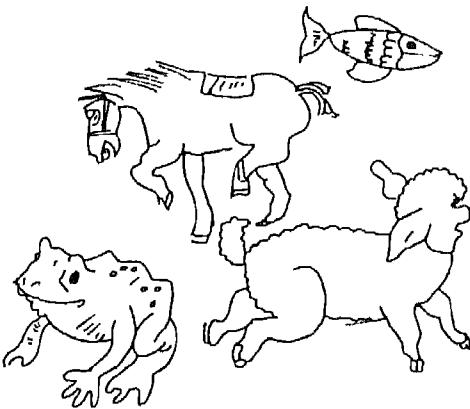
Teaching Point

1. Vocabulary taught —
   leap, climb, swim, trot, chop, jump
2. Grammar Point
   (a) Verbs : leap, climb, hop, jump
   (b) Nouns : lamb, cat, fish, frog, horse, dog.
   (c) Past Tense
       1. Climb - - climbed
       2. Swim — swam
       3. Leap — leapt
       4. Jump — Jumped

Rhyme 4

AUNTIE MONICA

I have an auntie, an auntie Monica
If she goes shopping they all say
        Oh . . .   lalla
Her frock is swinging . . swinging
        Her frock is swinging so ...
Oh, I have an auntie, An auntie Monica
Her basket moving   moving, her basket
moving so,
Her hat is flying . . . flying . . . her hat is
flying so . . oh, I had an auntie, Auntie
Monica.

Teaching Point
The grammar point 'ing'

1. Swinging	4. Dancing
2. Moving	5 Hoping
3 Flying	6 Skipping and so on

The article 'An'

Face Expression, the body movements,
Voice Modulation is being brought out.

Rhyme 5

THE SILENT LETTERS

Who the man was I have never heard,
Who first invented the written word
But why did he make spelling so hard,
Why put a V in fire guard?
How can I tell where the silent ones go,
Like the 'B' in bomb
Like the 'K' in know
The letter for plough
Could be Ploff or Ploff
How could he invent
Such ridiculous stuff

Activity : A game in silent letters can be played.

Vocabulary : know, knife, alms, almond, plough, bomb, etc.

Rhyme 6

POLITENESS

Good little girls and good little boys
Should never say
"Give me this, Give me that"
Oh, no, no, That never is the way
But
"Mummy will you please"
"Daddy will you please
and "If you please" to your
brothers and sisters.
'Thank you' when you get
'Sorry' when you hurt
'Hello' when you meet
'Bye - Bye' when you part
and "Namesthe" to all

Teaching Point

Vocabulary taught : (Request) please,
thank you, sorry,
hello, bye-bye.
Value education : Politeness, Expres-
sion and Actions

Developing Communication Skills in English

M. S RENUGA

The objective in learning a language is to emphasise not only the acquirement of the language skills but also to develop communication skills.

"The English language", says David Crystal, "open all kinds of doors into our own personalities and backgrounds and into the lines of those with whom we interact"

English is a language of great beauty, majesty and complexity This widespread language needs a new trend for producing instructional materials such as textbooks, work books, supplementary readers, remedial courses and additional learning resources on one hand and innovative techniques focusing on communication skills, development on the other This is an era of communication To communicate means 'to share' It encompasses the productive skills of speaking and writing and of course one cannot be a good speaker or writer without being a good listener or reader Hence, a child who wants to develop effective communication should focus on the four skills of listening, speaking, reading and writing

It was since long lingering in my mind whether a child born to an Indian parent be able to speak good, fluent English. How do these children acquire remarkable mastery over their mother tongue, but not the English language? Is it possible for me to make these children speak and read good and correct English? So I thought, it would be appropriate if communicative approach is introduced by way of 'learning by doing'.

For good communication, opportunities to communicate should be provided Children of primary classes bubble with energy. They should not be like 'a

bird in the cage'. They should be provided with the task which can give them scope for channelising the energy constructively and without fear.

Objectives

The major objectives of the communicative skills are :

(i)   To impart child centred education

(ii) To develop content and free expression.

(iii) Training to the intelligent use of the senses

(iv) To promote fluency based communication

(v)   To minimize writing work in primary classes

(vi) To develop a sense of creativity, delight and appreciation.

(vii) To inculcate reading habits.

(viii) To obtain maximum participation of all the pupils.

(ix) Application for self-study methods.

(x)   Exploring and learning together.

Now let's see how these communicative skills—listening, speaking, reading and writing can be imparted in primary classes.

Listening

Listening is being recognized as a receptive language skill, an important way of gaining ideas and information, perhaps as important a factor in man's day to day communication activities as that of seeing.

How to develop the listening skill ? The teacher first introduces commands like stand up, sit down, open the book, run out, open the window, etc. In this pupils respond physically. Then teacher asks the pupils to listen and draw, she says :

'Draw a house in the middle.
Draw a tree on right side.
Draw a bird on the tree'

Here children are unconsciously made to understand the structure 'in on'.

Listening becomes monotonous without modulation in voices Why do the children grasp the advertisement put in TV very quickly? It is attractive and admirable. In order to increase the listening capacity of pupils. I used to narrate stories with proper modulation. In the same way, poems are taught with tunes and children listen and repeat the same

In the sequential development of the language, arts and skills, the child learns to listen and 'speak' before he learns to read and write

For the first two years of learning a foreign language, most of the oral words should be carefully controlled; that is pupils are not left free to select any words they please or any grammatical form or construction

In the beginning oral questions like the following should be asked :

Is this an apple ?
Yes, it is.

Is this a pencil ?
No, it isn't.

Like wise many oral drills in sentence pattern are given for improving the speaking ability of the pupils of primary classes.

Action Chains

This exercise consists of a number of actions that follow one after the other in a linked series They are performed by the teacher who says at each point what she is doing. Then the pupils do the action in small groups, the sentences being said in chorus and by individuals. Action chains are valuable because they give language practice which has a high degree of correctness. This is of great use to the slow learners, for they need not worry about the next sentence

Miming : Miming is valuable because action can make the meaning of words clearer and more certain than can explanation or description
Teacher : 'I am opening the door, slowly', doing action the pupils know that she is expressing just what she is experiencing

Gesture : Gesture is an especially easy way of teaching opposites in meaning e.g. this, that, into, -out of, near-far; come-go

Acting, Dramatisation, Pantomime are oral language activities which spring from children's natural spontaneous play and their interest in hearing and telling stories The lessons—The Sky is Falling, The Hare and the Tortoise, Shake Well if taught by dramatization, the children are able to answer all the questions asked regarding the lesson.

Telephoning : Children are naturally interested in technical devices and their use Telephoning is an excellent way to use conversational skills and to practise speech skills in general.

Giving announcements : Children are asked to make announcements to the class, to the other classrooms and to the entire school about the programmes, events, games, lost and found things and so on.

Choral speaking : Choral speaking is a group and oral activity This choral speaking frees the children from the excessive shyness Some part of prose and poetry is done in choral speaking.

Speech through pictures : Children are provided with flash cards depicting pictures The pictures contain a lot of actions in them The children have to frame sentences by seeing the pictures.

Speech through speech : Reproduction of passages from memory. Even the

children of primary classes are encouraged to participate in the speech contest by way of memorizing.

Question-answer drill : Pupils are asked questions about the place they went on picnic e.g:

Where did you go ?
When did you go ?
What did you see ?

Reading

"A man ought to read just as inclination leads him; for what he reads as a task will do him little good." (Dr Samuel Johnson) One of the best ways to let the children know that reading is pleasurable, it is for actually reading and enjoying the activity right in their presence Stories written for small children are read out to them in a delightful and curious manner

Reading cards : When the children begin to read English words matching cards are used. They are on-correcting and self correcting.

Flash cards : These cards help the children to learn the words and recognise them The teacher flashes these cards one after the other and makes the learner to recognise and read them quickly.

The word method : Verb (action words and Nouns—names of objects) are first introduced The words are already learnt in the oral lesson. Children perform action

and label picture of actions before they are required to read the words.

Sentence method : The teacher reads out a sentence from a picture card There is a dog under the tree. She reads with correct pronunciation, stress rhythm and intonation. Then the picture card is passed round. Each child repeats the sentence in turn Then the card is put on the flannel board. Like wise many sentences are drilled This pattern helps the children in ·

(i)   Locating words in sentences.
(ii) Building up sentences using word cards.
(iii) Filling missing words in incomplete sentences.
(iv) Putting words in correct order
(v)   Picking up known words.
(vi) Reading words quickly.

In order to avoid mere rote learning, flash cards depicting the vocabulary limit of classes I and II are used for evaluating the reading skill of the children.

Writing

It is true in the teaching of written expression that children learn to write by writing. The present day approach to teaching is "Writing looks up on as one of the modes of communication".

Objectives of Writing

(a) To develop ability and skill in the mechanical aspects of written expression such as spelling, hand

writing, form (or) appearance, and punctuation and capitalisation.

Spelling : Ability to spell correctly is clearly needed by children in order to carry on their school work successfully. If you want to communicate effectively, the words must be spelt correctly.

Teaching Spellings

Using flash cards : Flash cards depicting spellings of words in the lessons are given to the children. These cards are used by them collectively and individually

Phonic cards : The cards containing alphabets are kept on the table. When the teacher utters the words, the pupils come and collect the alphabet cards, form the word, and place the card on the flannel board.

Using picture cards : The teacher shows the picture and pupils have to choose the word correlated to the picture.

Word building : The teacher writes the starting letter and ending letter e g · w ..c...e., jumbled words · octdor— doctor.

Then the teacher gives a word. e.g. notebook. The child has to write a word ending with the letter notebook.

Observation game : About a dozen words are given on the black board. Children are given a minute or two to observe and read the words Then they are rubbed. Then they are asked to write the words. In the same way 20 articles are kept on the table. Children are asked to observe for two minutes Children are asked then to write the names without seeing the articles

Building new words : A word is given to them. e g : consult. The children are asked to form 2,3,4,5,6 letter words from the given word

Multiple choice : In this five words are given One of the words is mis-spelt Children have to identify it

Completion item : This type provides a definition or contest. This lies between hills Va.... ey.

Hand writing : Legibility, speed and beauty are the three features of good handwriting

First strokes and curves are to be taught. Alphabetical order should not be followed. The print capital letters should be presented in groups.

Sentence are written in strips. These are distributed to the pupils to enable them to have hand writing practice. These strips serve as a model to emulate

Conclusion

By the practice of the communicative skills, the children of primary classes are able to listen, speak, read and write

correct English. Through the various methods for making these communicative skills, the teacher should persistently exert herself to make the pupils do the work. These skills transform the pupils from laborious reading and writing to the world of enjoyment and play and at the same time learning the language better. *"All work and no play make jack a dull boy"* Mere studies and no activity make the children dull and inactive. A pupil who has mastered the art of communication always stands to gain and this requires training Thus communication skills ensure proper reading habit and writing skills among the pupils The ideas and methods presented would surely provide a sense of conviction and clarity to the teachers who practise them. Even the dull child who 'wanes' to learn, also becomes active and enjoys learning. These flash cards, word cards, pictures are very useful when the teacher is on leave. Children of the parallel classes are also engaged without waste of time

Other Advantages

(i) These skills provides care for invdividual differences.

(ii) Grouping of children make them explore and learn together.

(iii) Allowing the pupils to choose their own topics.

(iv) It gives room for individual correction

Problems Encountered

Children are at varying level of language development and show varying attitudes towards learning. Though some children have a relatively large vocabulary of understood words, they show considerable maturity in making certain sounds ·

(i) The pupils were unable or unwilling to express at first

(ii) The teacher should be a little bit innovative in preparing the teaching aids which are not very costly

(iii) Some pupils who feel awkward to share their ideas were to be handled carefully.

(iv) The teacher must be alert, and awaken to snatch at everything new or novel that comes her way and use it profitably in her profession.

Peer Group Learning and Remedial Work in English

PREMILA ASHOK

The teaching-learning process requires innovative techniques to make it more effective Peer group learning is one of these innovations. The article introduces this method

Introduction

Peer group learning (PGL) began as a remedial programme for slow learners of English in classes VI, VII and VIII in July 1995 after the first mid term examinations. It sought to bridge the gap between what the learner knew or understood and what was required or desired of him This remedial course was a multiskill course which aimed at all those skills which are basic to work at a certain stage including lessons and exercises on reading and writing as well as on listening and speech An analysis was made to find out what the learner already knew, the level of his understanding and the ability to use his knowledge in well-defined situations

Concept

A small group of upto 5 to 8 pupils in a class was considered to be a peer group in this study There was interaction among group members so that students learnt from each other and stimulated each other to reflect and recognise meanings, grammatical structures, vocabulary items and answers to questions and also develop their communication skills.

Rationale

In the three "goal structures" — co-operative or peer group, competitive — individualistic, the first, Peer Group, lends itself for most type of learning outcomes.

As regards cognitive outcomes PGL structure scored in the following areas :

a Retention, application, transfer of information concepts, principles
b Mastery of concepts, principles
c. Verbal abilities
d Problem-solving abilities
e Co-operative skills
f Creative ability and divergent thinking
g Awareness of utilisation of one's capabilities
h. Role taking abilities.

Individualistic structure helped the learner only in the areas of mastery of factual information, individualistic skills and simple mechanical skills. The competitive structure was effective in the speed and quantity of work on simple drill activities.

In the area of affective outcomes peer group structure alone helped to include the following outcomes

a interpersonal skills
b Group skills
c. Democratic values
d Acceptance and appreciation of actual, ethnic and individual differences
e Reduction of prejudice and bias
f. Value education
g. Positive attitude towards school, subjects, etc.
h. Enjoyment and satisfaction from learning
i Moderate levels of anxiety to promote learning

i Positive self attitudes
j. Emotional capacity

Characteristics

a Students' access to each other. They use each other as major resource with free movement and talking between students.

b Students' access to the teacher reduces for ideas and solutions as they use each other more.

c Teacher statements are also moves among the groups not far "get on with your group" "don't you ask the other."

d Students' access to materials which are certainly located or shared. Students need knowledge for what is available and of ways to share the same.

e The room arrangement includes clusters of chairs or use of tables probably without open line leading towards any particular chair.

Objectives

The main objectives of the present study were :

a To determine if peer group learning would lead to greater development of communicative skills, particularly reading among the slow learners in English.

b To find out if such learning is related to better performance and proper combination:

Hypothesis

It is hypothesised that it is possible to promote peer group learning among slow learners.

Materials

The learning content was broken into manageable units through carefully planned learning materials, prepared by the teacher. Each learning module distributed among the students contained the following.

a   An overall view of the unit covered

b. Learning goals or terminal behaviours of the learner

c   List of new words and phrases

d   Appropriate learning tasks or activities where the learner has to use some learning strategy or the other such as associating, guessing, analysing, reasoning, discriminating, generalizing, etc in understanding the lesson

Designing Module

Learning tasks when designed should ideally possess certain characteristic features, but let us analyze the possibility of compatibility among these features :

A. Language used in real-life situations integrates all its components. Such integration of structures, vocabulary and composition, etc. at the same time may not be possible Hence artificiality is an inevitable feature at odds with pedagogics.

To be effective an exercise can't tackle many language items in a single exercise

B. To be effective an exercise should rate high on the scale of performability. Performability stands in the way of pedagogic effectiveness as isolation of items is done and there is no integration of all components of the language

C. Another feature of exercises is correctability. They should lend themselves to correction The teacher has to resolve this when framing exercises.

These are some of the contradictions

However, the aims should decide the form and density of the feature in a particular exercise. For example, if we want to establish a few new words, 'repetition' as a pedagogic device is more effective than integrating the language components to present a fuller language use.

A broad classification of exercise types is given which when brought together can establish language habits fairly effectively.

a. Exercises which help to establish forms— items such as articles, prepositions, etc

e.g. Fill in the blanks with suitable words in brackets ·

The programme was _____ (very, much) _____ (pleasing, pleased)

D. Intermediate type of exercise It tests not only structures as forms but provides for semantic interpretation also.

Example

Mark the sentence nearest in meaning to the sentence below :

Calcutta is one of the biggest towns in India

a   Calcutta is bigger than any other town in our country
b   No other town in our country is as big as Calcutta
c. Calcutta is bigger than most of the towns in India

E. When questions for reading comprehension are set special care should be taken.

Significance of Study

Remedial programme in schools and colleges generally takes the form of "coaching" for examinations. No attempt is made to help the weak students learn the language. The only objective is to help them pass the examinations. Expected questions are given and the students are asked to memorize the answers. In some cases, teachers merely 're-teach' the lessons already done by way of remedial work. 'Error-analysis', too, is sometimes made and difficulties experienced by the pupils are kept in mind while planning for remedial work In PGL on the other hand—

a. Students are helped to set up realistic targets or goals for achievement, use appropriate learning strategies, monitor their learning as well as do periodic self-assessment Generally, it is believed that such learning is possible only in the case of bright students

b. There is a lot of self-learning and a lot of self-direction on the part of the learner in the struggle and effort he makes to understand the message in the text and also acquire communication skills in English Pupils not only learn but also learn how to learn. In the light of the vast expansion of human knowledge continuously taking place, teaching our students how to acquire knowledge and skills themselves, i e. training them in several learning strategies is more important than giving them some knowledge or teaching them some skills

Learning is a developmental process which involves change. Change is possible only if the learner engages himself in some activity or the other. Activities may be physical or mental in nature. In PGL, the meaningful tasks the student engages in help him to acquire these learning strategies.

Self-learning involves cognitive strategies like 1 Associating or forming bonds 2. Comparing 3. Discriminating or

opportunity to discuss the use of strategies such as guessing, word meaning from context, trying to get global idea of the passage before analysing the bits, trying to grasp the meaning of the question, focussing on the spelling of the word to read it and so on.

E At the end of 6 months of the programme, an analysis was done using the following tools

    a. Formative evaluation, i.e. marks got by the students in tests conducted during the period of the experiment.

    b 'Feedback' interview schedule.

Formative Evaluation

The marks of 10 students who attended PGL were analysed — i.e. the marks before the commencement as well as at the end of the study It may be mentioned that no attempt had been made to control any of the variables other than the experimental variable in this study

The following trends were observed :

1. All the students except four showed an improvement in the range of 20 or more marks by the end of the last class test, although they had not all passed. One student had kept the same rate of progress. Two were found erratic in their progress.

2. Students performed better in paper II which had oral text as well as general English — composition, etc rather than Paper I which had questions in formal grammar.

3 In the last class tests where the unit was smaller all the students except one had passed (above 40%).

Feedback Interview Schedule

Chitra Krishnaswamy handling class VII says "There is a definite improvement especially in the oral skills of students In the written examination the improvement is not so obvious as they still make a lot of spelling mistakes and grammatical errors".

As regards the feedback got from the student, T. Dinesh Kumar says, "I like this method better because it is more interesting". Anuradha says, "Friends asking and helping each other to find the answers is better than the teacher telling the answers". There appeared to be a perceptible increase in the confidence level of the students. Arawind says, "I can answer the questions which the teacher asks the next day in class". PGL has its impact beyond the classroom as well, as revealed by Revathy and Geetha who became friends after coming together during PGL

In general all the students liked working in groups and they felt they had come closer to their teachers; thanks to the experiment.

Conclusion

It may tentatively be concluded that PGL can be promoted even among low achievers provided the group leaders are

selected carefully and the learning modules prepared should be easy enough for each group to comprehend the lesson. Only objective type questions should be included in self-assessment so that students can assess their progress themselves. It can provide them a sense of achievement if they are able to give correct answers

From the evidence gathered so far it seems that PGL would yield good results not only in terms of 'real learning' taking place but also better performance in the examinations The main investment that has to be made is in terms of time and care teacher takes in the preparation of effective PGL modules.

The findings of the study are subject to further confirmation through more experimental studies of a more vigorous nature. i e. where the variables other than the experimental one are fully controlled

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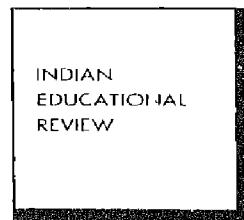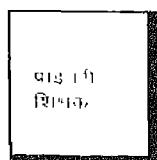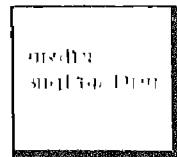
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NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

—∞—
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Editorial

SINCE the release of the documents, *The Challenge of Education and the National Policy on Education* (NPE, 1986) there has been concerted effort and serious concern to bring the disabled child population into the formal education system. If Education For All is to be attained this crucial input of special education has to be made operational, as about 12 million disabled children fall in the 5-14 age group. In order to initiate this, teachers need to actively intervene, practise stimulation strategies and stand committed to this cause.

In India, the teaching community will have to maintain continuous contact with the needs and problems of the special child in order to generate awareness to impart information and knowledge.

The dominant theme of this issue is **Special Education**. We had received a number of articles focussing on the education of children with special needs I have, therefore, made an attempt to put these together in this issue. The National Policy on Education, 1986 laid emphasis on the needs of children with disabilities within the purview of equal educational opportunities for all. This is vital for the integration of the physically and mentally handicapped with the general community as equal partners, to prepare them for normal growth and enable them

to face life with courage and confidence. Surely, this places greater demands on the teachers. The teachers need to develop competencies to handle children with different conditions

A child perceives the world through his vision and the Visually handicapped child needs to acquire skills and abilities to grow in all ages Professor Bishnupada Nanda speaks of emotional disturbances due to RLF, Smt. Shobha Sahu specifies the early childhood stage as critical for acquiring certain skills Shri R. B. L. Som advocates mainstreaming of the handicapped for effective social change

Dr Santosh Arora expects educational institutions to produce teachers in order to maintain the existing values and bring in fresh ones.

Hearing keeps people in touch with their surroundings, but its impairment can lead to serious educational handicaps. It is a developmental tragedy as it deprives the child of normal verbal inputs. Samuel Babu regards the painstaking efforts required by teachers and researchers to solve this problem. Dr Suniti Sanwal and R. Gupta's study shows the results when teachers plan and carry out home visits.

In school, we have children who do not have sight or hearing impairment but have reading problems—eminent personalities like Albert Einstein, Thomas

Edison, Woodrow Wilson had such learning disabilities. P. Easwari's article on slow learners suggests ways of making the child a self-starter. Dr Tapti Dutta suggests intervention/remedial programmes for disabled children and Dr P. L. Sharma wants that teachers should be aware about the problems of mental retardation and pre-lingual deafness in order to place children in the inclusive system. Dr Buno Zetsuvi delves into the many definitions of giftedness and reviews the characteristics of giftedness. The teachers' responsibilities increase on handling these children and also, the societal role needs to be outlined and educational interventions have to be well defined.

The teacher's role is very significant in developing cordiality of special children with the others. Vinit B. Khera's article states educational strategies appropriate in the pre-operational stage of children between 2-6 years.

Smt. Singh recites the Jaipur experience on Inclusive Education for Children with Special Needs — calling for NGOs and Government Agencies to join hands in this noble cause.

To achieve the target of education for all the objectives and different levels of training and facilities available have been specified by Dr Janak Verma.

Besides this, we have added features like book review, more news and more views.

We hope this issue will help to change the existing discriminatory attitudes, and help in creating welcoming communities and in developing a truly inclusive society for all people.

USHA DUTTA
Academic Editor

Effect of Retrolental Fibroplasia on the Behavioural Disturbance of Blind Children

A Theoretical Discussion

BISHNUPADA NANDA

RETROLENTAL fibroplasia (RLF) or Retinopathy of prematurity is one of the causes of visual impairment in the preterm baby due to the overuse of oxygen in the incubator. Shortly after birth vascularization of normal retina and its temporal periphery is completed but prior to its complete vascularization the normal retina is extremely susceptible to hyper-oxygenation mainly in its temporal part. The pathogenesis is vaso-constriction first (which is di-rectly proportional to the concentration of oxygen administered and its duration of exposure) followed by secondary vaso-proliferation. After removal of the infant into the normal room air, a marked endothelial proliferation arises from the residual vasculature, which develop into new vessels and grow through the internal limiting membrane into the vitreous cavity This condition fi-nally leads to retinal detachment (retinal separation) (Dhanda & Kalevar, 1987).

> *Researchers have mentioned different factors as the cause of emotional disturbance in the RLF blind children but no satisfactory theory has yet been offered. The present article reviews different studies on the emotional disturbance of RLF blind children and concludes that no single factor or combined factors are necessarily involved in causing emotional disturbance in the RLF blind children.*

RLF is also termed as a disease which is gifted by civilization. The main cause of RLF is pre-term birth. Now-a-days it has been proved that birth of a pre-term baby takes place due to maternal stress is pregnancy as well as a variety of structural, physiological and nutritional problems (Hanson, 1984). Gunther (1963, p.333) also studied stress in pregnancy as a possible cause

Maternal life style, smoking, malnutrition, alcohol and drugs	Inadequate social support	Maternal personal characteristics, young or old, short stature, low weight, unmarried status, prior induced abortions, low socio-economic status, twins, spontaneous rupture of membranes

STRESS

Stage I — Work, fatigue, poor hygiene and coitus

Stage II — Infection, placental function, progesterone

Stage III — Uterine irritability prostaglandins

Stage IV — Cervical changes

Premature labour

of premature labour. The figure on page 2 illustrates the cause of maternal stress and its role in the birth of a premature baby

Some other common predisposing factors include inability of the cervix to remain tightly closed, insufficient placental circulation to the foetus, unusual uterine or placental position, multiple foetuses, etc. (Hanson, 1984). In the sixties, most of the prematurely born infants were likely to die or develop moderate to severe developmental disability. Current follow-up research places the percentage of very adversely affected neonates at under 15 to 20 (Drillien, 1975, Kopp & Parmelle, 1979) due to modern techniques of temperature-stabilized incubators and some other highly sophisticated devices. In spite of sophisticated devices to support the early life of such neonates, all pre-term born infants are not saved from such chronic disabilities as blindness, hearing deficits, movement and locomotion disorders, speech and communication disorder, mental retardation, behaviour disorders and school underachievement. Use of a temperature-stabilized incubator to save the life of a pre-term neonate make some another technical hazards. In some cases the doctors and medical technicians cannot control the concentration of oxygen administered and i's duration of exposure in the incubator, causing blindness in the neonates followed by RLF.

Many researchers have noted a striking incidence of emotional disturbance in children with blindness due to RLF, as compared to children who are blind from birth. Keeler (1958) showed that RLF children showed strikingly abnormal behavour and definite autistic symptoms. He concluded that there was a greater incidence of autistic patterns of behaviour in the RLF group than in the non-RLF group. Parmalee, Cutsforth and Jackson (1958) reported that RLF children are significantly emotionally disturbed. They suggested that the children with blindless due to RLF or premature birth or both possess a certain unique behaviour pattern Blank (1959) also reported that, "the incidence of severe ego defects and autistic and motility disturbances is far higher among children with RLF than among congenitally blind children without brain damage who were born full-term." He also noted that, "severe personality problems among the blind prematurely born with brain damage, but without RLF, is probably as high as among those with RLF .. ."

Causes of emotional disturbance in RLF may be parent (or caretaker)– child relationship, early sensory deprivation, prematurity, low birth weight with prematurity, duration of gestation, oxygen poisoning, brain damage, etc. RLF almost always involves prematurity, although there are occasional cases of RLF in full-term infants. Prematurity itself must be regarded as a possible contributing cause of emotional disturbances, as most such factors as brain damage and low birth weight that

are statistically associated with prematurity (Warren, 1984, p. 265). Chase (1972) found very little relationship between the degree of prematurity and the incidence of emotional disturbance Friberg and Freedman (1964) also failed to find a significant relationship between gestational age and degree of emotional disturbance. Close relationship between prematurity and emotional disturbance proved that there is evidence of brain damage (Parmalee, Cutsforth & Jackson, 1958, Knoblock, Rider, Harper and Pasamanick, 1956). It is an established fact that RLF condition is a direct result of the administration of oxygen-rich environments in the incubator to prematurely born infants. Naturally the question arises regarding the existence of a significant relationship between RLF and oxygen administration in the incubator for pre-term infants. Fraiberg and Freedman (1964), Parmelle et al (1958) and Chase (1972) found no significant relationship between "developmental arrest" (a syndrome strongly characterized by emotional disturbance) and duration of oxygen treatment and concentration of oxygen administered.

Some psychologists tried to prove a positive relationship between early sensory deprivation and emotional disturbance of RLF children RLF children would have experienced a period of early sensory deprivation as compared to the non-RLF children, because of the restrictions of the incubator environment and the relative isolation from human contact that typically accompanies prematurity (Warren, 1984). Chase (1972) failed to establish any positive relationship between early sensory deprivation due to the duration of incubation or duration of hospitalization and emotional disturbance. Rather he found an opposite relationship It may be that parent–child emotional relationships play a greater part than the other factors, but even this relationship is not "clean", in the sense that damaged parent–child relationships may often be precipitated by other factors, such as early separation (Warren, 1984). Still today we are not clear whether parental inadequacy, maternal deprivation, emotional rejection of the parents or family play any direct role in the development of emotional disturbance among RLF blind children though congenital visual impairment creates impediment in building up a normal relation between the parents and their child and influences the emotional and social development of the child (Nanda, 1998) According to 'infant–mother' attachment theory (Bowlby, 1951, 1969, 1982), a tremendous crisis situation is created in the parents of congenitally blind children and for this reason the parents cannot build an easy and spontaneous relation with the children, especially when a child is very obstinate and cannot build up a relation with parents (Thomas & Chess, 1977). As a result the child shows behavioural disorder.

Finally, we can conclude that the various factors which are discussed above, either in isolation or in combination, do not necessarily produce emotional disturbance in the RLF blind children. At least there is no specific document on the basis of which we can say that a direct relationship exists between the emotional disturbance of RLF blind children and oxygen poisoning or restrictions of the incubator environment and the relative isolation from human contact or parental deprivation or any other factor.

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Research in Hearing Impairment
Special Teacher Perspective

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Hearing keeps people in touch with their surroundings. Beginning before birth and continuing throughout life, hearing constantly monitors the environment. Thus, it is hearing that provides us with a continual source of information about happenings within our immediate physical environment, as well as with warning signals that are important to our physical safety. Hearing is, therefore, vital in every aspect of our daily existence (William, 1980). Through hearing we also derive one of our greatest pleasures: listening to music (Morgan, 1992). It has been said that the sensory mechanism of hearing is more vulnerable to damage and insult than any of the other sense organs (Dunn, 1973). While it is possible to stimulate blindness by closing our eyes or putting on a blindfold we cannot voluntarily 'turn off' our hearing (William et al., 1980)

The child with permanently impaired hearing, by the very nature of that impairment, has handicaps which have an impact on the child's total development and adjustment. The effects of impaired hearing pervade all communication, understanding, speaking, reading, writing as well as hearing language. Often the child's most obtrusive handicap is his/her speech. This deficit affects not only the way in which he/she perceives the world but also the way the world perceives him/

> *The child with permanently impaired hearing by the very nature of that impairment, has handicaps which have an impact on his total development and adjustment. In India research in special education is still in its infancy and research in hearing impaired children which had languished for decades is beginning to show some signs of development.*

her. Due to lack of words, the range of thought of the child with 1/2 impaired hearing is seriously restricted and his/her intelligence cannot be given the opportunity it needs for full development (Ewing, 1947). Because of his/her wordlessness, he/she must think without using words, and in turn he/she is not only limited in his/her ability to understand the speech of others but also unable to express himself/herself in speech.

Prevalence of Hearing Loss

As hearing impairment is an invisible disability, it is very difficult to detect. According to Silverman a rough estimate of prevalence of hearing loss is that five per cent of school children have a hearing impairment, and that one or two out of ten in this group or about five in a thousand will require special educational attention. Hearing impairment is thus, a 'low incidence' handicap.

Behavioural Characteristics of Hearing Impaired

Educational Effects

Kirk (1978) has described the education of the hearing impaired "as the most special of all areas of education ... unique, ingenious and highly specialized".

Many people with normal hearing do not fully comprehend the enormous difficulties that deaf children have in hearing language. Hearing children learn vocabulary, word order, grammar, shades of meaning and other aspects of verbal expression by listening to others, and their own speech, from early infancy. The deaf child is exposed to verbal communication only partially or not at all.

Hearing impaired children even with superior intelligence, are greatly handicapped in acquiring appropriate language skills. Their sentences may be short, incomplete or out of order. These problems and many others can be directly attributed to their loss of hearing.

Language development is, of course, closely related to reading and to development in all academic areas. Many studies have found that deaf children, as a group, are significantly behind their hearing peers in performance on standardized tests of educational achievement.

Effects of Hearing Loss on Speech

Persons with normal hearing use their hearing in acquiring and using speech. Speech is controlled by the ear. The baby learning to talk first experiments with his own speech, i.e. voice (cooing, babbling) and is stimulated in using it, because he enjoys its sound. The baby with impaired hearing uses his voice too, but is stimulated less by auditory enjoyment then by the actual and kinesthetic pleasure it brings. The less hearing the handicapped child has, the less pleasure vocalization holds for him and the sooner he may become a nonspeaking child.

Not only does hearing loss affect the ability to articulate speech sounds, it also changes the ability to learn the rhythm of speech and its inflection or melody. It influences voice quality and volume of speech too.

Black (1971) summed up the speech problems of the deaf by indicating that their speech differs from the normals in all regards. If trained to amplify residual hearing with hearing aids, the deaf can gain valuable speech understanding that assists their development in the area of speech (Winthrow, 1981).

Effects of Hearing Loss on Language Development

The greatest handicap that results from sensory deprivation of hearing from the prelingual years is the barrier to language learning, which in turn is the main reason for the educational handicap. The child who hears only partially or not at all, is unable to progress in the normal sequence of language mastery, which includes the capacity to comprehend verbal messages and to speak, to read and to write. The normal child enters school at five or six with a rich background of heard language acquired gradually from the day he was born. Within a few weeks after birth he begins to perceive sounds of his environment, associating meaning and source of the stimulus. In turn, as he continues to receive auditory stimulation he begins his own vocal imitations, which emerge into words by about one year. By the time he starts school several years later and is expected to associate meaning with the visual symbols of language (learn to read) he has a well established foundation of experience in hearing and producing words which he sees in print. The hierarchy of language development presupposes this natural order of events. We never ignore the basic tenet that language input must precede language output.

Unfortunately, studies on the overall 'language' of hearing impaired children are not available. As part of her extensive investigation of vocabulary problems of deaf children, Templin (1966) concluded that hearing impaired and hearing children were alike in general intellectual ability but that the deaf were immature in language development (Maynard, 1969).

Effects of Hearing Loss on Personal–Social Development

The barrier created by the lack of language development which permits use of normal channels of communication with one's peers would obviously be expected to play an important factor in the personal and social development of any human. In the infantile period, when the child is highly egocentric in his communicative attempts, the hearing impaired child is not easily distinguished from a hearing child by most observers. In fact, his deficit often goes completely unnoticed even by his parents and the physician who follows his physical

development. At two, he deviates more, but still is not unlike a hearing child of the same age who is just beginning to use connected speech attempts. From that time on, when the normal child is expected to increase his spoken language attempts in such a way that he learns it as a medium by which he can begin to control his environment and relate to others, the difference maintained by the deaf child becomes increasingly marked. By three to four years of age, when the mastery of connected speech normally occurs in hearing children the differences marking the deaf child increase almost in snowball fashion. Differences in the partially hearing child are of course, related to the degree of handicap. Myklebust (1964) in reviving various investigations that have been done in this area, concluded that deaf children up to the age 15 are approximately 10 per cent retarded in social maturity as compared to hearing children. Up to 15 years the greatest task confronting the child, is attainment of ability in self-help and in self direction. He implies that deaf children are inferior in achieving self-help, but as higher levels of social competence become necessary with increase in age, they find attainment more difficult, indicated by the gradual decline after 15.

It has been found that those children profoundly deaf from early life show the greatest emotional deviation as they grow older, males to a greater extent than females. These children tend to be unaware of their deafness as a handicap in the early years. It is not until about the age of puberty that they bring to view their problems as a handicap distinguishing them from their hearing peers. Adolescence is the particularly stressful period since it is then that they begin to consider their role in the future as independent adults.

Research in Perspective

The problem of impaired hearing provide a fertile field for both basic and applied research. Medicine and allied fields are constantly seeking to broaden the understanding of hearing loss and prevention. Physiologists and psychologists are exploring hearing function itself. Physicists and engineers are working to produce electronic equipments which can improve the present amplifying devices. Sociologists are seeking to extend our understanding of the hearing impaired and their environment and educators are attempting improved approaches to the difficult task of educating the hearing impaired child.

Research in Hearing Impairment

Research in education for hearing impaired children, which had languished for decades, is beginning to show some signs of development

Nine studies could be identified in this area. The training efforts in the education of the hearing impaired children being limited, few studies have been noted in this area. The following table gives faculty-wise coverage.

Hearing Impairment Level of Research

Agency	Masters	Ph.D
Bangalore University	1 (Psy)	
Agra University	1 (Psy)	
M. S. University of Baroda	2 (MSW)	
University of Mysore	1 (Speech Pathology)	
Gujarat University	2	
Institute of Speech and Hearing, Mysore	2	

Seven studies have been conducted at the Master's level and two are institutional studies. The University Departments of Education, Social Work and Psychology have been involved in this area. Only one study involved experimental treatment. Two studies fall in the area of test construction, two refer to practical factors, four relate to school factors and one to the role of teachers in identifying speech and hearing impaired children.

Anyhow, the current research continues to be limited both in quality and quantity.

– In qualitative terms the studies suffer from serious methodological flaws.

– In terms of coverage there is imbalance in inter and intra-operational areas.

– Hearing-impaired and deaf-blind children are a low prevalence groups; the difficulty of conducting research discourages many from studying this population.

– The small number of professional personnel in the field results in fewer people who are interested in and qualified to conduct research.

It goes without saying that the number of studies is really very small as compared to studies in mental retardation, physical impairment and visual impairment. There is a need to identify areas of research which will help to educate these children in special schools as well as in regular schools. Co-operative research is likely to augment the individual research effort. Universities may organise training programmes towards this end.

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Future Research

A major research agenda in this area for the coming decade is the development of effective strategies for implementing practices that improve the instruction and learning of hearing impaired children. The fundamental step is the establishment of an extensive descriptive data based on learner characteristics that are instructionally relevant for addressing a broad array of questions related to improvement of instruction and learning. Any number of problems provide provocative research possibilities for those interested in the education of hearing impaired children. A few areas may include:

– Investigation of relationship of degree and use of residual hearing in child behaviour, teacher efficacy, academic progress and parental adjustment.

– Investigation on how hearing

impaired children can make use of available technology for language development.
- Investigation into the efficacy of the existing school programmes and need for modification.
- Investigation on multi-category handicaps (deaf-blind) and their placement problems.

Research in special education is a neglected area at present. It requires strengthening considerably if education of the hearing impaired is to be made an effective proposition. Universities have a major advisory role in the process of developing special education.

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Intervention Programme for Learning Disabled Children

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LEARNING disability refers to a multifaceted problem. It includes a large number of disabilities associated with listening, speaking, reading, writing and arithmetic. It has been found that "learning to read" is the most important task that all children have to face during the first year of schooling. Further learning or "reading for learning' at the later stage, depends upon the early reading skills. Here the discussion is restricted to 'reading disability' otherwise known as 'dyslexia'.

> *Learning disability manifests problems associated with listening, speaking, reading, writing and arithmetic. Reading disability or dyslexia is important as it affects further learning and academic achievement. There are two types of dyslexia, true dyslexia having specific cognitive deficits in simultaneous and successive processing and garden variety having mixed problems.*

What is Dyslexia?

The term dyslexia comes from Greek and means, "an impairment in the ability to read", (Damiel, et al., 1966). The label 'dyslexic' is sometimes used to distinguish a person from other remedial readers who may not have the presumed neurological problems.

Stanovich (1988) divided the children with reading difficulties into two types: (i) true dyslexic, and (ii) garden variety dyslexic. (i) The dyslexic with specific cognitive deficits, it is argued, can be easily found among children with high scores on traditional IQ tests, but having severe problems in acquiring reading (decoding) in the elementary

stage According to Stanovich (1988) the specific deficits in majority of dyslexics are in phonological coding, although visual–spatial problems can be found in a minority of poor readers. (ii) Garden variety poor readers show variety of mixed problems in intellectual and cognitive processing manifested in many areas such as putting things in sequence, seeing relationship among words, objects or pictures, attentional problems and inability to organize and plan ahead.

Rayner and Pollatsek (1989) defined 'reading' as the ability to extract visual information from the page and comprehend the meaning of the text. Hence the process of reading consists of two aspects.

(i) Word decoding,

(ii) Comprehension.

How to Diagnose Dyslexia

Dr J.P Das has developed and standardized tests on word decoding in Hindi and Oriya. The tests consist of 100 words each arranged in order of increasing difficulty. It measures the ability of letter-recognition and the articulation of combination of letters The Oriya and Hindi Passage Comprehension Tests are adaptations of English Passage Comprehension Test from the revised Woodcock Reading Mastery Test (Form G, Woodcock, 1987). Both tests have been developed and standardized by Dr J.P. Das and Dr T. Dutta under an ERIC project. The Oriya and Hindi tests in Word Decoding and Passage Comprehension can be used for diagnosis of dyslexic children. Redemption or Intervention programme can be provided to those poor readers using the Pass Reading Enhancement Programme (PREP) developed by Dr J. P. Das (Das, 1998).

Intervention/Remediation Programme

All these years we have been teaching contents either in group or individually in the name of remediation. But remediation is not instruction When instruction fails remediation takes over. The studies have shown that PREP prepared by Das et al. (1994) explained very well the cognitive processes underlying decoding in the following diagram.

Underlying Structures of Word Recognition
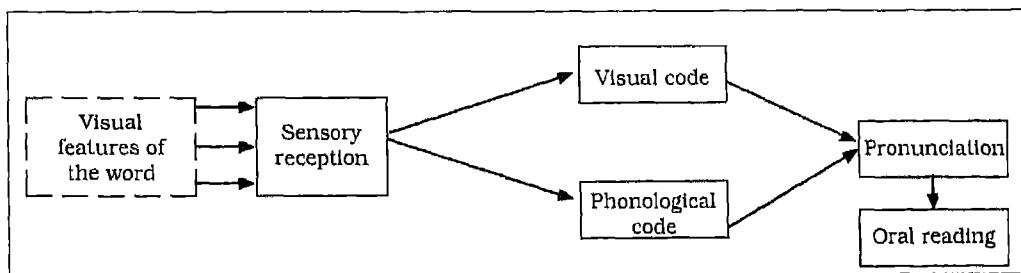
They emphasized simultaneous and successive processes because simultaneous process is predominant in visual coding, whereas successive processing plays a major role in phonological coding. Pronunciation of a word is assembled by organizing speech sounds corresponding to the printed word which is predominantly a successive process requiring the motor programme (articulation of the sounds) for oral reading. The processes underlying word recognition is presented in the diagram given below.

Processes Underlying Word Recognition
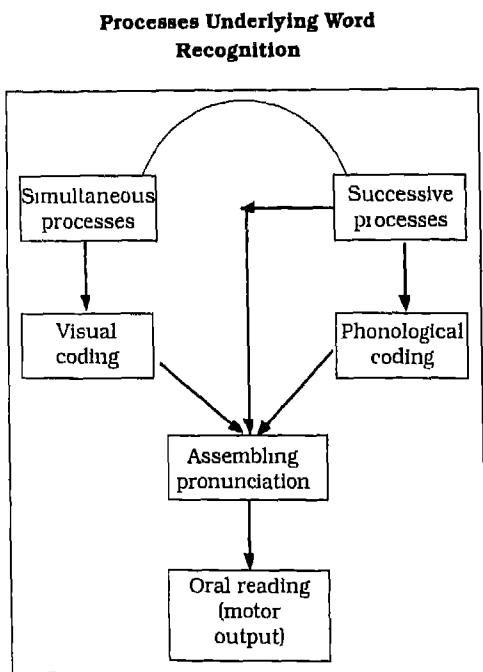
Das (1998), works very well with dyslexic children PREP aims at improving the information processing strategies i.e. simultaneous and successive processing as these are the two main cognitive processes underlying reading. PREP not only helps in avoiding direct teaching of word reading skills, but also facilitates transfer of principles through experiencing the task and guided discovery rather than by direct teaching and learning rules. The programme is so structured that tacitly acquired strategies are learned tacitly and not through direct teaching The self-learned strategies are likely to be used in appropriate ways by those who are given PREP. Attention and planning are also aspects of each task. Specifically, attention is required and used in performing each task and planning is challenged by encouraging the children to come up with their own strategies as they are engaged in discussions, both during and following their performance. Ten tasks are included in PREP. Each task involves both a global training component and a curriculum related bridging component. The global component includes structured non-reading tasks that require the application of simultaneous or successive strategies. The bridging component involves the same cognitive demands as the global component but provides training in simultaneous and successive processing strategies linked to reading and spelling (Das et al., 1994). The PREP task of Joining Shapes — Global and Bridging — is described in the following pages.

Focus. *Successive Processing*

Integral Skills: Visual scanning, rehearsal, verbalization, short-term sequential memory for instructions.

DESCRIPTION The purpose of this task is to join a series of geometric shapes in response to (1) a series of verbal instructions, and (2) a set of rules provided by the instructor The shapes —triangles, squares, and hexagons—are presented in rows on a sheet of paper Each row of triangles, squares, or hexagons is always separated by a row of circles. Within each session, six items with varying numbers of rows are presented The first two items contain one row of triangles and one row of squares, with a row of circles in-between. The third and fourth items contain one row of triangles, one row of squares, and one row of hexagons, with rows of circles in-between. The fifth and sixth items contain a row of hexagons, a row of triangles, a row of squares, and another row of hexagons, a row of triangles, a row of squares, and another row of hexagons, with rows of circles in-between These items are presented on two different stimulus cards. There are three levels of difficulty; each corresponds to the number of consecutive instructions to which the student responds. Two sets of stimuli, Set (a) and Set (b), are provided at each difficulty level

ADMINISTER	MATERIALS
Difficulty Level 1 = Items 1 – 6 (Set a or b)	1. Response sheets (may be laminated for repeated use
Difficulty Level 2 = Items 1 – 6 (Set a or b),	2 Instructor's directions/answer key
Difficulty Level 3 = Items 1 – 6 (Set a or b)	3 Record form
*Administer only one set of 6 items at one difficulty level per session	4. Pencil (marker for laminated sheets).

SPECIAL INSTRUCTIONS

- If working with two students who are at the *same* difficulty level, give the same instructions to both students and check for errors after each set of instruction Ensure that the students do not copy from each other

- If working with two students who are at *different* difficulty levels, alternate the instructions between the two (e g. Student 1 – join a triangle to a square; Student 2 – join a square to triangle and a triangle to a hexagon; Student 1 – etc.)

SCORING

Score each complete connection individually
- 3 points for a correct response at Prompting Stage 1.
- 2 points for a correct response at Prompting Stage 2
- 1 point for an incorrect response at Prompting Stage 2, or any answers thereafter.

Sample

● Expose the sample item to the student and say: In this task, you are going to learn to draw a pattern by joining triangles, squares, and hexagons (ensure that the student knows the names of each of these shapes). There are four rules to remember when drawing the pattern

1   To join squares, triangles, and hexagons together, you must always pass through a circle (demonstrate)

2   The line drawn must always go forward on the page (left to right) and never backward (demonstrate).

3.   The line drawn must be continuous from the beginning to the end of the page, so you should try not to lift your pencil during the task, or you should remember to always continue from where you last stopped (demonstrate).

4   You must join the closest shapes that match with the instructions (demonstrate)

● Ask the student to repeat the instructions to ensure that the task is understood

● Provide instructions for the sample item and allow the student to complete the sample. Provide feedback

Prompting Stage 1

● Provide the student with a response sheet and say: Now follow my instructions and connect the shapes to make a pattern Remember to follow the rules.

● If the student follows all instructions *correctly*, acknowledge and praise his/her responses Next, ask the student how he or she performed the task and whether any special strategies were used

● If the student completes all connections correctly, proceed to the next instruction. Each correct response to an instruction is awarded 3 points

● If an *incorrect* connection is made, proceed to Prompting Stage 2.

Prompting Stage 2

● Stop the student and say. That's close but start back here (point to the last response) and listen carefully to my instructions. I said· (repeat the instruction). Allow the student to correct the response

● If the student makes an incorrect connection, say: Do you remember the rules? Are you following the rules here? Discuss the rules with the student and allow the student to correct his or her response

● If the student completes the connections *correctly* proceed to the next instruction A correct response here is awarded 2 points

● If an *incorrect* connection is made, proceed to Prompting Stage 3 and award 1 point.

Prompting Stage 3

● Demonstrate the correct response. Ask the student to try to explain some of the strategies that you used Discuss your strategies (for example, scanning ahead before proceeding and rehearsing the rules)

TASK SUMMARY

● In a casual manner, summarize the task and review the effective strategies used As the student whether he or she enjoyed the task Discuss the parts of the task that the student found most difficult or simple, as well as ways in which the task could have been performed more easily Next, say· Now you are going to perform the same type of task but this time, you will join letters to make words.

Joining Shapes — Global

Sample

Join   T – S
        S – T
        T – T
        T – S
        S – S
        S – S
        S – T
        T – T
        T – T
        T – S
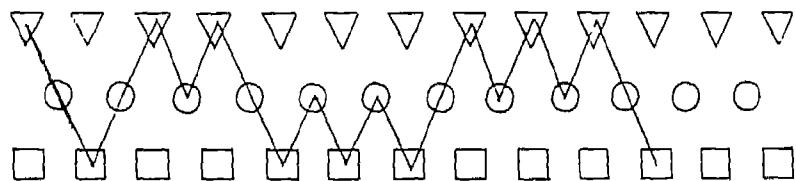
T = Triangle   S = Square   H = Hexagon

Joining Shapes — Global

Difficulty Level 1

Item 1a
Join   T – S
         S – T
         T – T
         T – S
         S – S
         S – T
         T – S
         S – S
         S – T
         T – T
         T – T
         T – S
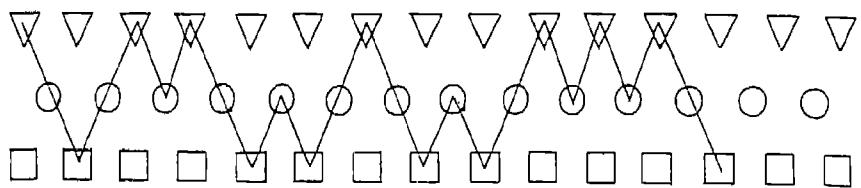
Item 2a
Join   S – T
         T – T
         T – S
         S – S
         S – S
         S – T
         T – T
         T – S
         S – T
         T – S
         S – S
         S – T
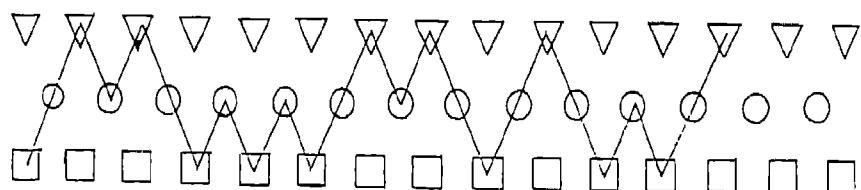
T = Triangle S = Square H = Hexagon

Joining Shapes

Record Form

Name_____ Date_____ Session No._____

Score   3 points for correct answer at Prompting Stage 1
           2 points for correct answer at Prompting Stage 2
           1 point for incorrect answer at Prompting Stage 2

Global

Difficulty Level _____ Item ___

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Difficulty Level _____ Item ____

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Difficulty Level _____ Item ____

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Difficulty Level _____ Item ____

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Difficulty Level _____ Item ____

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Difficulty Level _____ Item ____

1	2	3	4	5	6	7	8	9	10	11	12	Subtotal
												/36

Joining Shapes
Bridging Task

FOCUS. *Successive Processing*
Integrated Skills. visual scanning, rehearsal, sound blending, prediction, short-term memory for letters

DESCRIPTION On a sheet of paper, several rows of letters are presented to the student. The purpose of the task is to join the letters from the top row to the bottom row — moving diagonally from left to right and following as set of rules — to produce a word When the student reaches the bottom, he or she uses the last letter of that word as the first letter of the next word, and proceeds back to the top in the same manner to produce another word This is continued until the student reaches the end of the sheet The student is required to tell the instructor the words that he or she formed There are four levels of difficulty, each corresponds to the length of the words included in the level. Two cards at one difficulty level are administered per session Two sets (a and b) are provided at each difficulty level.

ADMINISTER	MATERIALS
Preliminary Level = Cards 1 - iii (Set a or b) Difficulty Level 1 = Cards 1 - 3 (Set a or b) Difficulty Level 2 = Cards 4 - 6 (Set a or b) Difficulty Level 3 = Cards 7 – 9 (Set a or b) *Administer only one set of 2 cards at one difficulty level per session	1 Stimulus response cards 2 Answer key 3. Record form 4 Marker (if response sheets are laminated)

SPECIAL INSTRUCTIONS

- , If working with two students, give each student a different set (a or b) and allow them to work simultaneously

- Assist as necessary (follow the instructions for Prompting Stages)

SCORING

- 3 points for a correct response at Prompting Stage 1

- 2 points for a correct response at Prompting Stage 2.

- 1 point for an incorrect response at Prompting Stage 2, or any answers thereafter.

PROCEDURE

Sample

- Expose the sample item and say: In this task, you are going to learn to draw a pattern by joining letters that will make words There are five rules to remember when drawing the pattern·

20

1   You must always start at the upper left hand corner of the page and proceed from the top to the bottom, and then from the bottom to the top, to make a word (demonstrate)

2   To make a word, you must make only one connection to a letter in each line All the words will have the same number of letters (demonstrate)

3   The line drawn must always go forward across the page (left to right), and never backward (right to left) (demonstrate)

4. The line drawn must be continuous from the beginning to the end of the page, so the last letter of each word is always the first letter of the next word (demonstrate)

5. You must look for the closest letter that will make a word (demonstrate).

● Ask the student to repeat the instructions to ensure that the task is understood, then allow him or her to practice on the sample Provide feedback

Prompting Stage 1

● Give the student the first stimulus sheet and say: Now, using the rules, join the letters to make words Each time, go from the top to the bottom, and then from the bottom to the top After you make a word, well me what it is. I can help you if you want.

● Spontaneous correction of wrong connections are permitted. After the student has completed the stimulus card, acknowledge and praise correct responses Next, ask the student how he or she performed the task and whether any special strategies were used.

● If the student completes the word *correctly*, allow him or her to proceed to the next word Three points are awarded for each correct response.

● If an *incorrect* response is given, proceed to Prompting Stage 2

Prompting Stage 2

● If an incorrect connection is made, stop the student and ask· What is the word? If the student states a word that he or she has not spelled, say. I don't think that is how you spell___ If the student gives a nonsense word, say What does ___ mean? and explain to the student that it is not a meaningful word In each case, say· Try again and see if you can find the right word You may also want to suggest that he or she try sounding out the letters and scanning ahead before making a connection.

● If the student makes the correct connections but cannot state the word, say. Those are the right letters, now try to figure out what the word is Have you seen this word before? Do you know any of the sounds that are in this word? Provide assistance if necessary

● If the student does not attempt a response, or is becoming visibly frustrated in trying to find the word, say: Let's review the rules (have the student repeat the rules) Okay, according to those rules, what are the possible choices for the second letter in the word? Assist the student to find the appropriate letter, then say: That's right, now continue from here and try to find the rest of the word. If the student makes a *correct* response after these prompts, proceed to the next word and award 2 points.

● If a *incorrect* response is given, proceed to Prompting Stage 3. One point is awarded.

Prompting Stage 3

- If the student still cannot make the appropriate connections, or does not attempt a response, continue to reveal each letter in the same manner as described in Prompting Stage 2 until the student forms the correct word. Tell the student what the word is and then sound out each letter as it is presented. Ask him or her to try to explain the strategies that you used to read the word. Discuss your strategies (for example, scanning ahead before proceeding, sounding out letters, and sound blending)

TASK SUMMARY

- In a casual manner, summarize the task and review effective strategies used. Ask the student whether he or she enjoyed the task Discuss the parts of the task that the student found most difficult or simple, as well as ways in which the task could have been performed more easily

Joining Shapes
Bridging

Answer Key

Sample Card
camp
plus
spot
tell

Set (a)			Set (b)	

Card i. a	Card ii. a		Card i.b	Card ii.b
and	big		him	his
dad	gum		mop	sad
day	mom		pop	dim
yes	mud		pup	mow
sit	did		pie	win
tip	dug		eat	not
pet	get		tub	tag
	ten			got

Card 1a.	Card 2a.	Card 3a.	Card 2b.	Card 3b.	
jump	frog	from	best	went	help
pull	grab	miss	test	tent	pack
less	back	sled	tall	trip	kiss
sell	keep	duck	land	pond	send
like	plan	kick	drop	desk	dull

Card 4a.	Card 5a.	Card 6a.	Card 4b.	Card 5b.	Card 6b.
bath	faint	cream	till	being	dress
hung	toast	metal	last	glass	swing
grow	thing	lunch	tank	spend	green
week	grass	hotel	kill	dream	never
king	sound	lucky	luck	maybe	reach

Card 7a.	Card 8a.	Card 9a.	Card 7b.	Card 8b.	Card 9b.
happen	expect	teacher	itself	better	yelling
nobody	tunnel	rainbow	famous	rather	grandma
yellow	letter	without	saving	robber	airport
waited	record		ground	rabbit	
during	danger		doctor	ticket	
gentle	really		rocket	toward	

Joining Shapes
Record Form

Name_____Date_____ Session No._____

Score   3 points for answer at Prompting Stage 1
        2 points for correct answer at Prompting Stage 2
        1 point for incorrect answer at Prompting Stage 2

Bridging

Difficulty Level ___ Card ____

Word						
Score						

Difficulty Level ___ Card ___

Word						
Score						

Difficulty Level ____ Card ___

Word						
Score						

TOTAL ____/45____

It has been observed that process training is much more effective in ameliorating dyslexia. A ready-made tool for diagnosis of dyslexia along with a remedial programme (PREP) should be available for the interested teachers working with dyslexic children. But the teachers need exhaustive training in using PREP programme as it is highly technical. Training programme is available in the learning clinic run by Prof. J.P. Das at Bhubaneswar.

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Understanding Gifted Children

From the Educational Perspective

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The Concept of Giftedness

VARIOUS definitions have been given to giftedness because of its varied talents and abilities. Chambers' Universal Learner's Dictionary defines "gifted" as having very great natural ability. Websters (1962) defines "gifted" as having a natural ability for any of the following aptitudes and talents:

Gifted children need to be understood. The teachers need to know their characteristics, features and developmental patterns. Above all, educational interventions need to be given from time to time.

— Social talent

— Mechanical talent

— Artistic talent

— Musical talent

— Linguistic talent

— Academic talent

Sumption and Lucking defined gifted children as, "those who possess a superior central nervous system characterised by the potential to perform tasks requiring a comparatively high degree of intellectual abstraction of creative imagination or both."

According to the fifty-seventh year book of the National Society for the Study of Education, "A talented or gifted child is one who shows consistently remarkable performance in any worth-while line of endeavour." Thus we shall include not only the intellectually gifted but also those who show promise in music, the graphic arts, creative writing, dramatics, mechanical skills and social leadership.

A further dimension at attempting to define giftedness is that it is culture bound, not easily recognised as such (Gallagher, 1975) and highly dependent on societal needs (Newland, 1976).

Giftedness has also been defined in terms of IQ as assessed by test of intelligence. A gifted person according to Terman possesses an IQ of 130 and above. Giftedness based on the Stanford Binet IQ fluctuated between 150 to 110.

Benedict (1935) observed that culture shapes man, but although more slowly, man shapes culture as well. No definition of the gifted is adequate if it does not regard the interactive nature of individual excellence and societal requirements.

USOE, Washington D.C. proposed a concept of gifted and such a child can be identified as one with outstanding abilities capable of high performance and demonstrate achievement in any one of the following six areas.

1. General intellectual ability
2. Creative or productive thinking
3. Specific academic aptitude
4. Leadership ability
5. Psychomotor ability,
6. Visual and performing arts ability.

Paul Witty (1958) proposed a broad definition of the term gifted. The gifted or talented child is one who shows consistently remarkable performance in any worthwhile line of endeavour.

However, Renzulli (1979) considers that the USOE definition fails to include non-intellectual or motivational factors.

He points out the importance of motivational and creativity factors that can make all the difference between mediocrity and excellence.

Thus, gifted children are in some way superior to a comparison group of other children of the same age. It should be clear that giftedness is whatever we choose to make it. There is no inherent rightness or wrongness in the definitions professionals use. Some definitions may be more logical, more precise or more useful than others. Giftedness as we use the term refers to cognitive superiority, creativity and motivation in combination and of sufficient magnitude to set the child apart from the vast majority of his age mates and make it possible for him to contribute something of particular value to society.

Thus, an adequate definition of giftedness includes the requirements that a person shows, at least the potential for making a remarkable and valued contribution to the human condition. Besides the traditional definition based on IQ and other definitions cited earlier, a diversity of other definitions have appeared in the last two decades, including the following criteria for giftedness.

— Exceptional academic achievement
— Exceptional creativity
— Existence of special talents
— Superior achievement beyond peers in any valued line of activity
— Inclusion in the top ten per cent of children according to any criteria of giftedness.

The problem with each of these specifications is that, taken along each may include some children who are not really gifted who do not eventually contribute something of extraordinary value to the society and may exclude some children who are gifted.

As suggested by Renzulli (1977) it seems to be convincing that gifted children should be defined as those who have demonstrated

1. High ability (including high intelligence)

2. High creativity i.e., the ability to formulate novel ideas and apply them to the solution of problems

3. High task commitment i.e., a high level of motivation and the ability to see a project through its conclusion.

Thus, multiple criterion definitions include all three characteristics — high ability, high creativity and high task commitment which are very highly necessary for truly gifted performance in any field to the extent that a child has demonstrated that he is better than 85 per cent of his peers or at least in one of these criteria he may be thought of as gifted.

Characteristics of Gifted Individuals

Despite divergent opinions about what constitutes giftedness or creativity or talent, one thing is certain that talent stands for a high degree of performance in a specialized field such as music, art, science, etc. In the following review an attempt has been made to review some of the characteristics of gifted children.

Samuel Kirk (1972) provides a list of identifying characteristics in the areas of intellectual ability, scientific ability, talents in fine art, social leadership ability and mechanical skills. For example, the following distinguishing characteristics are to be checked in the area of intellectual ability.

— Learns rapidly and easily

— Uses a lot of common sense and practical knowledge

— Reasons things out, thinks clearly, recognizes relationships, comprehends meanings

— Retains what he has heard or read without much rote drill

— Knows about many things which other children are unaware of

— Uses a large number of words easily and accurately

— Can read books that are one to two years in advance of the rest of the class

— Performs difficult mental tasks

— Asks many questions. Is interested in a wide range of things

— Does academic works one to two years in advance of the class

— Is original, uses good but unusual methods or ideas

— Is alert, keenly observant, responds quickly.

Witty (1955) has summarized the characteristics of the gifted as follows.

— The early use of large and accurately employed vocabulary

— Language proficiency — the use of entire sentences and ability to tell or reproduce a story at an early age

— Keen observation and retention of information about things observed

— Interest in and liking for books

— Early interest in calendar, in telling time and in clocks

— The ability to attend and to concentrate for a longer period than is usual for children

— Demonstration of proficiency in drawing, music or other art forms

— Interest in exploration and discovery of cause and effect relationships

— Early development of the ability to read.

Of all the human groups, the gifted and talented are the least likely to form stereotypes. Research has shown that the gifted students are less authoritarian, less rigid and therefore tend to be risk-taking in the world of ideas They react with greater originality, imagination and resourcefulness to the stimulation they receive. They are independent, confident and generally mature in their interaction with the external world (Nichol & Davis, 1964; Martinson, 1972).

Barlon (1968) studied doctoral candidates in science both by tests and by clinical interview method. The conclusions regarding the more highly regarded young scientists are

(i) Superior measured intelligence

(ii) Exceptionally independent in judgement

(iii) Resistant to group-endorsed opinions

(iv) Marked by a strong need for order and for perceptual closure.

(v) Unusually appreciative of the intuitive and non-rational element in their own nature

(vi) Distinguished by their profound commitments to the search for aesthetic and philosophical meaning in all experiences.

The adjustment problems of the gifted and the highly intelligent studied by Gallagher and Crowder (1957) found that these students had difficulty in adjusting to the regular classroom situation academically, intellectually, socially and emotionally.

Martinson (1967) showed that the majority of the gifted children did come from middle-class backgrounds but not from enormously wealthy families.

In the Indian context, Patel (1966) identified gifted pupils on the basis of IQ over 120 and found that the gifted were (i) more attentive, (ii) more innovative, (iii) more interested in intellectual problems.

Pandit (1973) studied the adjustment problems of the gifted and found out that (i) the gifted had less adjustment problems, (ii) the gifted evaluated the situation more positively and critically,

(iii) more emotionally stable, (iv) intelligent, (v) assertive, (vi) venturesome, (vii) tough-minded, (viii) placid, (ix) controlled and relaxed.

Joshi (1974) found that (i) the gifted are more creative, (ii) more social, (iii) more prestige-based.

One of the best early summaries of the traits of the gifted was based upon studies by C.C. Miles (1954) on the characteristics revealed in the childhood biographies of 100 geniuses in childhood. She listed the following persistent traits differentiating these individuals from the general child population — independence of thought, perceptiveness, understanding, strength of memory, originality, creativity, depth of understanding, trustworthy, conscientiousness, strength of influence on others, persistence, devotion to distance goals and desire to excel. Kumar (1984) concludes that

— Creatively gifted students scored significantly better on creativity and intelligence.

— Creatively gifted students were less neurotic.

— They were significantly higher on choice dilemma and prone to risk-taking situations.

— More independent.

— The intellectually gifted were more syllabus bound.

— Less creative.

— Neither extrovertial nor neurotic.

— Better in academic attainment.

From the above review of the characteristics of the gifted it can be concluded that the gifted have extraordinary characteristics apart from those of an average normal child. They have been analyzed and grouped as under:

1. Psychological and Behavioural Characteristics

Gifted children tend to be superior in every way—intelligence, physique, social attractiveness, achievement, emotional stability, even in moral character. Study after study beginning with Terman's work in the 1920s have shown that gifted children as a group are taller, heavier, stronger, more energetic and healthier than other children of their age who have average intelligence.

2. Educational and Occupational Characteristics

Gifted children tend to be far ahead of average children in academic achievement. They learn to read easily. Many of them are taught to read by their parents or learn to read themselves before they enter school. Usually many of the gifted are younger than their superior academic performance would have you believe. The gifted tend to enter occupation demanding greater than average intelligence, creativity and motivation. Most find their way into the rank of professionals and a high proportion distinguish themselves among their peers in adulthood. Occupationally and educationally they are winners.

3. Social and Emotional Characteristics

Gifted children tend to be happy and well-liked by their peers, both gifted and non-gifted. Many are social leaders at school, they are an emotionally stable group, self-sufficient and less prone to neurotic and psychotic disorder than average children. They have wide and varied interests. Giftedness is generally associated with superior social and emotional characteristics. Creative genius is not a sign of mental instability nor is mental illness a prerequisite for creative genius.

4. Moral and Ethical Characteristics

The gifted tend to have moral attributes such as fairness, honesty, compassion and justice. It was found in most studies that gifted persons were superior to the average in concerns for moral and ethical issues and in moral behaviour. It was also reported that there was a tendency in most gifted children, even at an early age, to be concerned with the abstract concepts of good and evil, right and wrong, justice and injustice (Holling Worth, 1942; Martinson, Termen, 1926) and to be particularly concerned with social problems and the ways they could be resolved.

5. Intellectual Characteristics of Gifted Children

Gifted children are endowed with many personality and intellectual qualities. They are found to learn rapidly and easily and display rich common sense and practical knowledge. They are logical, think coherently and recognise relationships and have good memory. They are found to have a good fund of general knowledge and a very good vocabulary. They are usually ahead of their class fellows and they ask many questions. They are found to be alert, keen observers with quick reactions. Besides these, they have intellectual fluency and originality. Their minds have the power of elaboration, inventiveness and flexibility.

6. Development Pattern of Gifted Individuals

Development is the product of maturation and nurture. Maturation is the unfolding of a design that is essentially innate and there is nothing external that has the power to influence it. Nurture is the intervention of the environment (i.e., physical, educational and social, etc.) as it interact with innate patterns to facilitate its fullest expression. The term 'growth' is used to describe the measurement of development and is concerned with increment and decrement whereas maturity indicates the attainment or completion of a particular stage of development and a readiness for the next stage.

These terms not only refer to the quantitative changes that are expected to take place with the increase in chronological age, but also to the qualitative changes that are expected to take place in an individual as growth is seen as discontinuous in the attainments of higher levels of maturity.

Mental growth takes place gradually and continuously from birth to maturity but at what age this growth ceases is debatable. For instance, the slowing down in the rate of growth that takes place during the early teens, for most mental functions, reaches its peak in the mid-twenties, but evidences from many other growth studies show intellectual gains up to nearly thirty years of age.

Developmental stages exist and do not take place smoothly like growth because of the critical aspect of energy transformation in the individual. The transformation and focussing of energy is the essence of both the developmental and the creative process. Developmental process centres around stabilizing and controlling the creative imagination and harnessing it to constructive use.

So far development has been viewed as an individual phenomenon as it relates to the intellect and creativity has been discussed as continuous or discrete. That individual development cannot be created as isolated from its socio-cultural origin has been emphasized by both Arieti (1976) and Simonton (1978). Both ask the crucial question why geniuses appear at a certain time and place in history and not at another, and both would attribute this to certain socio-cultural events that significantly affect the creative development of individuals. Like others before them, they recognised that the appearance of men of eminence takes place irregularly and in clusters.

Creativogenic societies are those which promote creativity. Ariety (1976) regards creative persons and creativogenic cultures as the two essential components of creativity. Individuals, he suggests, make roughly two contacts with culture. One relates to individuals' use of certain of their biological equipment to understand their environment and satisfy their needs. The other relates to individuals' acquisition of things already present in the culture that are mediated by inter-personal relationships. Both the individuals and the culture are perceived as an open system so that the individual gives to culture and takes from it. When a culture is creativogenic it makes available to an individual creative elements that are perceived or accepted as such if similar characteristics exist within the individual. This then, prepares the way for a magic synthesis that will produce innovation, which in turn is offered to and becomes a part of culture. A creativogenic society offers to the individual the possibility of becoming great, but it does not make the occurrence of greatness automatic. Arieti discusses nine conditions present in a creativogenic society that will facilitate greatness.

— Availability of cultural means: accessibility to equipment and materials.

— Openess to cultural stimuli

— Stress on becoming, not just being

— Free access to cultural media for all citizens without discrimination.

— Freedom to retain and freedom to express.

— Exposure to different and even contrasting cultural stimuli
— Tolerance for, and interest in divergent views
— Interaction of significant persons.
— Promotion of incentives and rewards.

Simonton (1978) and Arieti (1976) both recognize that genuises have the potential to become eminent and that actualization can occur through creativity. Whereas Simonton who makes a distinction between creative productivity at a certain time in a person's life sees creativity as a part of development in an individual's formative years and identifies those cultural conditions that may facilitate or hinder creative development. Arieti looks at creativity as a dynamic exchange of two open systems, the individual and creativogenic culture with certain conditions that facilitate the emergence of eminence. Arieti emphasizes the conditions in a culture that can be expected to foster creativity. Simonton examines cultural conditions that effect creative development. The combination of both these views only enhances our understanding of creative development still further.

4 Problems of Gifted Children

Gifted children do face problems like average children. But problems of the gifted are unique, may be because of their characteristics, potentialities, abilities, etc The list can go on. However, the problems discussed here are a few common but significant ones and need

careful understanding for developing programmes for better development of the gifted children.

4.1. Denial of Equal Educational Opportunities

Gifted children when allowed to attend regular classes face problems of their own as well as create some for their fellow pupils and the teacher. An average class and its programmes are planned for a child of average ability. The same programme given to a child with superior intelligence or special ability tends to deny him/her the opportunity that he/she needs for the full development of his/her talents. Keeping the child tied to such programmes amounts to giving him/her a handicap and not full and adequate facilities for education. Any democratic set-up aims at providing equal facilities for all the members. Denying special programmes for the gifted means denial of equal opportunities.

4.2 Problem in Regular Class

Common problems to be anticipated regarding the gifted children while in regular classes is the fear of their proper development. Sooner or later a gifted child becomes conceited without realising it. The possibility of such a situation increases if they are allowed to be in the same class as children of average ability. In ordinary classrooms the contrast between their ability and that of an average child becomes obvious to them very soon. It is also quite customary for a teacher to entrust bright students with a few of the average ones

to help them in their studies. Such conditions become still more conducive to conceit. A teacher teaching thirty children with a few bright ones may find it hard to bring out the implications of such a responsibility to the gifted.

4.3 Feeling of Backwardness

On the other hand this situation creates some problems for the average children too. With this group outshining them all the time can give them feeling of inferiority. Often it can lead to frustrations due to a continuous sense of failure experienced by them. They are lagging behind most of the time while the gifted are occupying the highest positions. It deprives the average child of the experiences and pleasure that he would have otherwise got by being at the head of the class.

4.4 Emotional Adjustment

Some gifted children suffer from severe problems of emotional adjustment. Parents may have high expectation levels, using the child's accomplish-ments to fulfil their own needs for recognition. We often see some of the unpleasant effects upon behaviour when parents insist that their children show-off their talents for all the world to see. The child actor, used to adult acclaim, may become a person who is never content unless he is in the limelight. In this way pressure to achieve in one of the problems faced by the gifted.

4.5 Difficulty in Relating to Authority

Another problem faced by the gifted children is difficulty in relating to authority. It seems foolish to waste time on needless arithmetics drill when the answers are already known and understood.

It is understandable why teachers often do not favour some of the gifted children that they meet in their classes. As we have seen some are indifferent to criticism. Some refuse to do assignments. Some are outspoken in their opinions and even try to instruct their class. Teachers find these children difficult to control and frequently the teachers themselves feel threatened by the presence of such children in their classrooms. It takes a secure adult to accept and to like a child who may be more knowledgeable or more capable in some areas, than the teacher herself.

4.6 Lack of Enrichment

In the absence of a special programme of education for the gifted it is customary in an educational system to allow double promotions and place the bright child in a senior class. This acceleration is based on the belief that he will be able to find a challenge in the work of a senior class and utilize his talents. Contrary to this expectation a bright child when given accelerated promotion is placed out of his group with respect to physical, social and emotional development. As the child goes higher in the ladder of development we expect him to change his interest pattern as well. A child who shows higher intelligence when placed with children who are higher on the developmental continuum may find himself out of step in other activities and

mental continuum may find himself out of step in other activities and interest. Under these circumstances it is a better proposal to provide an enriched programme for these children while they are allowed to share the experiences of who are at their own level of development.

Lack of enrichment of educational programmes for the gifted carries with it the risk of giving rise to bad habits in the bright children. Work given to them under ordinary arrangements becomes unexciting and unsatisfying.

4.7. Overloading with Mediocrity Type of Work

In the absence of a clear concept of enrichment it is common in our schools to entrust more work to the gifted children. It is to be understood that being *overloaded with mediocre work* is not enrichment for a talented child. Routine type of work or work that is not quite challenging for him can have the effect of monotony which is more harmful than advantageous.

4.8. Different Rate of Growth and Development

Another problem is considering the fact that each child maintains a *different rate of growth and development.* Some may develop in one aspect earlier and foster than others of the same age-group. There may be others who are slower in their general rate of growth. An ideal programme has to meet the demands of all these individuals. For the optimum and all-round development of the child and in particular, the gifted, the child should be allowed to work according to his own pace, then unfolding of the inner qualities will be more effective.

A search for beauty and self-expression may be misunderstood which might be jeered at by peers, repressed by the teacher and found queer by parents. There are certain needs which are important for the gifted students which Maslow has termed higher order needs, e.g. need for knowledge, for understanding of beauty and for self-actualization. While we can say that the lower order needs can fairly well be met by the home, the higher order needs are often not satisfied.

4.9 Underachievement

A very great problem of the gifted is underachievement. Underachievement is defined as a serious gap between the predicted potential of an individual and his actual achievement. It is underachievement not only below expected performance in school subjects but also achievement in terms of expressed latent potential and productivity. Underachievement is largely brought about by individual transaction and interaction with the immediate family, school, society and the larger environment.

4.10 Handicapped gifted children are hardly recognized; their disabilities conceal their possibilities. The educators and psychologists only recently were made aware of these groups of students

as a talent pool; unfamiliarity and lack of experience have obstructed its visibility. Not only is there the problems of a wider acceptance of the concept of handicapped gifted and the selection of appropriate programmes for them but also the selection and development of proper instruments for their identification The greater the awareness and understanding of the hindrances and obstructions that disabilities pose to these gifted children, the more will it be accepted that average or below average attainment in school is outcome of the handicap and not of the ability.

4.11. Gifted girls have faced problems because of their gender this has arrested achievement from escalating to higher levels of development that should ultimately lead towards fulfilment and eminence. Behaviour of girls is more strictly regulated than boys Girls are expected by our male-oriented culture to accept the traditional role of preparing to become housewives and mothers rather than to pursue an academic or professional life. Although achievement is perceived as essential for boys, it is not perceived so for girls.

Anthropological scholars state that many problems experienced by our youth arise from cultural shaping and conditioning.

If we are interested to provide educational intervention to the superior children in order to mobilize their abilities in a desired manner to have superior human resources in future, we must have clear-cut concept about who the gifted are. The gifted are that group of children whose performance is consistently remarkable in any worthwhile line of endeavour.

In order to understand the gifted children, one must have knowledge about their characteristic features, developmental pattern and the problems faced by them. As it has been mentioned in this paper, the society plays a vital role in shaping the superior and, in turn, superior also shape society; it is therefore obligatory on the part of society to arrange all those facilities and resources which can harness this group of human resources. Educational intervention and social motivational environment should go hand-in-hand to shape the gifted.

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Early Childhood Education and Blindness

SHOBHA LAXMI SAHU

DURING early childhood, children develop from helpless dependents into walking, talking children with minds of their own. These remarkable transformations take place as children learn through everyday opportunities to participate in ordinary settings.

The early childhood years' development is best described by Erik H. Erickson, who proposed a theory of psycho-social development and Jean Piaget, who proposed a theory of cognitive development. Erclkson emphasizes the role of social variants in development. His theory encompasses stages from infancy to old age but the first three stages applies to early childhood development. He proposed that infants develop a sense of trust and comfort due to the consistent and responsive care-giving.and if not, they become fearful and insecure. During toddlerhood, the toddlers need supervision and opportunities to develop a sense of autonomy and if care-givers are critical and impatient, the toddler develops shame and self-doubt. Preschoolers need opportunities to question, explore, experiment and to develop concepts of right and wrong and if adults disapprove of this initiative, they may develop feelings of guilt.

J. Piaget emphasizes the active role of children in learning and cognitive development. His theory entails stages from birth to adolescence. According to his theory, during the sensorimotor period infants learn about their environment through active exploration involving looking,

> *Early childhood is an exciting period of discovery and accomplishment. This period entails the first eight years covering infancy, toddlerhood, preschool and early primary years. Regarding the period of acquisition of milestones by blind children, there are no precise answers since children are individuals and vary in their rate of development. Moreover, blind children will certainly need more time to acquire developmental skills that are related to vision.*

mouthing, touching, hanging, manipulating and moving. The most important discovery during this period is the concept of object permanence Children at pre-operational and intuitive period are working on language acquisition and symbolic thought. Their perceptions are self-centred. The important skills developed during this period are classification of objects (according to function, shape, colour, size and texture), number concept, whole part relationships, etc.

Early Childhood Education

Focussing on Early Childhood Education, the National Policy on Education (1986) has given a great deal of importance to Early Childhood Care and Education (ECCE). It views ECCE as an important input in the strategy of human resource development, as a feeder and support programme for primary education. It has also taken into account the holistic nature of ECE and has pointed out the need for organizing programmes for all round development of the child. In the same context the Kothari Commission has stated the following objectives of the Early Childhood Programme.

1. To develop in the child good health, habits and to build up basic skills necessary for personal adjustment such as dressing, toilet habits, eating, etc.

2. To develop desirable social attitudes and manners and to encourage healthy group participation, making the child sensitive to the rights and privileges of others.

3. To develop emotional maturity by guiding the child to express, understand and control his feelings and emotions.

4. To encourage aesthetic appreciation.

5. To stimulate the beginning of intellectual curiosity and to foster new interests through opportunities to explore, investigate and experiment.

6. To encourage independence and creativity by providing the child with sufficient opportunities for self-expression.

7. To develop the child's ability to express his thoughts and feelings in fluent, correct and clear speech.

A good early childhood programme working to fulfil the above objectives must also have three basic characteristics.

1. Rich and varied learning experiences.

2. A caring, informal and trained staff.

3. A physical environment that is safe as well as attractive which promotes learning and healthy development.

Since the early childhood programme aims for all round development of the child, the content of early childhood education must include the following parameters.

1. *Physical development* relating to the ability of the child to master and control the use of large and small muscles.

2. *Social development* referring to the development of the use of social skills in a group setting with both adults and other children. It is often developed through opportunities to cooperate, participate and take turns in both routines and activities.

3. *Language development* referring to the child's development of the ability to use and understand language. Activities that promote language development might include speaking, listening etc.

4. *Affective development*: referring to a child's development of attitudes, values, interests and appreciation in regard to himself and others.

5. *Cognitive development* referring to the child's development of thinking processes. Activities related to this development include opportunities for experimentation and problem-solving that provide opportunities to classify spatial relationship, etc.

Blindness

Blindness is an organic condition. What blindness means to people is frequently related to their experiences, attitudes and beliefs which in turn influence their relationships with persons who are blind.

Early childhood is an intensive learning phase in human life-span, one in which the individual will most actively accumulate from his environment ideas and factual knowledge. The senses are the instruments through which the child receives a totality of perceptions which all reflect reality. Harmonious development of the individual depends strongly on the normal functioning unit of the sense organs. Absence of vision will tear open a substantive gap in the information system with negative consequences for intellectual and physical development. It is best explained by Dr Berthold Lawenfelt who stated that blindness limits perception and cognition in three ways:

1. in range and experiences;

2. in the ability to get about; and

3. in the control of the environment and of the self in relation to it.

This blindness with limiting effect has to be compensated with alternative mechanisms to facilitate holistic development. These compensatory mechanisms must constitute the area of priority in early education of blind children. However, it must be ensured that activities that form a part of the general education process must not be neglected and have to be blended with the specialized activities in case of blind children. Hence the basic philosophical undercurrent governing the early childhood education should be that a blind child is similar to other children and this similarity must never be allowed to fade. Therefore, the emphasis must not be on the difference due to blindness but on the commonalities that the blind child shares with provisions made for variations due to his own individuality and the limitations of his blindness.

Regarding the period of acquisition of milestones by the blind children, there are no precise answers, since children are individuals and vary in their rate of development. Morever, a blind child will certainly need more time to acquire developmental skills that are related to vision. Thus such children show delays in early development if milestones of sighted children are used for assessment. Their needs are similar to other children but they may have additional ones due to lack of vision. So the early childhood education must cater to the general and unique needs of blind children.

Similarly, the content of the Early Childhood Education remains the same for a blind child. However, modifications are required in the curriculum, learning strategies, aids, teaching techniques and infrastructural environment. But here it is imperative to specify that the point at which modifications are required depend on the educational needs of the child. Educational intervention for the blind children must commence from birth since the early years comprise a critical period which facilitates acquisition of certain skills. One of the universally pronounced advocacy is integration of the blind with the sighted for healthy development but the caution is that integration must be balanced with the fact that they also need to learn some adaptive coping behaviours as well as certain insights about themselves.

Summing up, Early Childhood Education must focus on individualization, unified instruction, additional stimulation and self-activity for blind children since the foundations of a productive life in society is laid in early childhood. Only a strong foundation can create a firm structure.

Concept Development among Special Needs Children

A SUBSTANTIAL number of children have a variety of impairments giving rise to different educational needs. Today, educators recognise more than a dozen different impairments. Each impairment brings in its wake certain difficulties in receiving education.

For the last 200 years attention has been focused on developing hardware or developing pedagogical techniques for imparting knowledge For example, Braille for the visually impaired was developed in the second quarter of the nineteenth century Manual alphabet for the hearing impaired was developed during the time of the French Revolution. At about the same time Germany was developing the oral/aural method of teaching the hearing impaired.

Smt Maneka Gandhi, Minister of Social Justice and Empowerment, at an exhibition of locally made teaching aids held in NCERT

The advent of the computer has revolutionized the education of special needs children but the computer does not teach these children how to develop concepts and how to think. We are now thinking of mainstreaming special needs children in the community. This means that they must be prepared to take up work in the community for their own good as well as for the good of the community. For example, the Supreme Court of India has decided that blind persons should be allowed to appear for the Indian Administrative Services Examination. This decision has wide social and economic implications. It also casts on the educators the responsibility of preparing special needs children to undertake wide ranging responsibilities.

Piaget has aptly pointed out that concepts are the building blocks of thinking. No administrative or community work can be undertaken successfully unless special needs children are taught how to think. To do so they must first develop accurate and appropriate concepts.

The technology developed so far is not necessarily environment friendly nor does it help in developing appropriate concepts. A rich reservoir of material is available in local communities from which simple teaching-learning material could be prepared to build accurate concepts among special needs children.

Realising this, the Rehabilitation Council of India (RCI) organised a Workshop-cum-Exhibition in collaboration with NCERT in New Delhi on 24 and 25 March 2000. Over a 100 teaching aids developed locally were displayed. RCI has published illustrated catalogue depicting these aids and showing how they can be used to develop accurate concepts among children with special needs.

This workshop-cum-exhibition has initiated a new trend in the education of special needs children. This trend should be encouraged to promote the development of local materials so that children with all kinds of impairments could have access to environment friendly and low-cost aids that will help them in the development of realistic concepts of the environment around them

The catalogue published by RCI will assist teachers in developing similar teaching-learning material from low-cost/no-cost material available locally. RCI is also proposing to organise regional workshops to train teachers in the preparation of teaching-learning materials made from locally available materials.

Innovation is the very foundation of special education. Therefore, the initiative taken by RCI needs to be followed up with other innovative ideas to improve the quality of life and education to children with special needs.

Perhaps one or two illustrations will make this concept abundantly clear. A blind child cannot readily see an elephant. A model prepared from local clay or straw will assist him in developing an appropriate concept of an elephant. A recent study (1999) conducted under the auspices of

Concept Development among Special Needs Children

the Ministry of Human Resource Development showed that blind children were very much behind ordinary children in physical concepts. Similarly, teaching of colour concepts to mentally retarded children poses a special challenge. Artificial flowers prepared from paper of different colours repeatedly shown to a retarded child will help him/her to learn to identify different colours. A hearing impaired child may not understand the word 'apple' unless a flash card with the word and a picture is presented to him. It would be better to show him an apple as well.

To impart good education to special needs children there has to be combination of appropriate technology, techniques and teaching-learning material. RCI is trying to tackle the problems on all fronts. The object of this workshop was to initiate a new trend by promoting the development of local teaching-learning material so that all the three aspects mentioned here could be appropriately developed.

J.P. SINGH
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Attitude of Teachers towards Hearing and Speech Impaired Children

A Comparative Study

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ACCORDING to literature dealing with health, disability means "any restriction or lack of ability to perform an activity in the manner or within the range considered normal for a human being" (Govt. of India, 1983). It is characterized by deficiencies of customarily expected activity performance and behaviour. The disability may arise as a direct consequence of any loss or abnormality of psychological or anatomical structure or function, or as a response by an individual to a physical and sensory loss or abnormality.

The presence of hearing and speech impairment in a child may serve as a source of negative attitudes from those around him/her. This paper presents the comparative attitude of 25 teachers who have never dealt with hearing and speech impaired children and 20 teachers who have dealt with hearing and speech impaired children.

An attitude is a dispositional readiness to respond to certain situations, persons, or objects in a consistent manner which has been learned and has been one's typical mode of response (Freeman, 1962).

Education for all by 2000 A.D. which also includes special children is what UNESCO has declared (Sangeeta, 1998). This is a positive step towards normalization. Ideally, normalization should project a disabled child and his normal counterparts going hand in hand to the same school and doing all

the activities together. However, this will be successful only when the disabled persons are accepted by the teachers of normal schools with a positive attitude. Integration offers a more normal environment and more relevant and wider social experience. It also enables the disabled to feel part of and be part of their local neighbourhoods.

Nigam, 1989 (as cited by Tilak, 1994) supported retarded persons being put into such life situations where they have their experiences among normal behaviour models. With supervision and counselling there is a good chance of them adapting to it. It will help them in learning the prevailing life-style of the normal community.

Narayan, 1989 (as cited by Tilak, 1994) in pointing out the benefits of integration says that integration at the school level helps in many ways. If today's normal children, who are tomorrow's employers and law makers, have an exposure and opportunity to be with the mentally retarded children, there are chances that in future mentally retarded children will be taken better care of.

Methodology

The research was conducted in and around the campus of G.B. Pant University of Agriculture and Technology, Pantnagar. It included the main Pantnagar Campus, Patharchatta and Haldwani. The sample consisted of 25 teachers who had never dealt with hearing and speech impaired children and 20 teachers who had dealt with hearing and speech impaired children.

First of all, a survey was carried out in all the schools to see if there were any hearing and speech impaired children in them. Finally, only those schools were included in the study sample which had hearing and speech impaired children. The schools included were Primary School, GGIC, Balnilyam and GIC in main Pantnagar Campus, Primary School in Patharchatta and Beersheba in Haldwani.

The tool used for the study was an interview schedule. It contained the following subheads.

1. Teaching Plan

It dealt with the attitude of teachers of both groups whether anything special should be kept in mind while planning teaching programme for the hearing and speech impaired and whether the opinion of parents was necessary in planning it.

2. Outdoor Trips

It included the comparative reactions of teachers of both groups regarding taking the hearing and speech impaired children on trips and the importance of such trips.

3. Teaching Methods

It included questions like providing special techniques and facilities for teaching the hearing and speech impaired and the importance of visual methods for teaching the hearing and speech impaired.

4. Evaluation

It took into account the basis for evaluation of hearing and speech impaired children and whether the opinion of parents and paramedical personnel be taken for their evaluation.

5. Enhancing Self-concept

The opinion of teachers was taken as to whether enhancing the self-concept of hearing and speech impaired children was an important goal in education and the ways in which it could be achieved.

6. Home Visits

The comparative attitudes of teachers of both groups was noted regarding the integration of hearing and speech impaired children with hearing children in school.

7. Integration

The attitude of teachers was noted regarding the integration of hearing and speech impaired children with the hearing children in schools.

Regarding the analysis, some questions were open-ended so that the attitude of teachers of both groups could be dealt with in detail. Rest of the questions elicited a "Yes–No" response. A response depicting a positive attitude was given a score of one and a response depicting a negative attitude was given a score of zero. Percentage analysis was carried out to compare the attitude. "t' test was used to find the difference in attitude of teachers of both groups.

A comparison drawn across the two groups of teachers regarding the teaching plan for hearing and speech impaired children showed a difference in their attitude.

Results and Discussion

TABLE 1

Comparative Attitudes of Teachers regarding Teaching Plan

Sample Group	Dimensions of Teaching Plan			
	Nothing Special (%)	Use of Gestures (%)	Black-boards (%)	Patience by Teachers (%)
Teachers who have never dealt with HSI children (N = 25)	44	56	–	–
Teachers who have dealt with HSI children (N = 20)	–	35	45	20

When asked what should be kept in mind while planning the teaching plan for the hearing and speech impaired children, 44 per cent of the teachers who had never dealt with the hearing and speech impaired children and none of the teachers who had dealt with hearing and speech impaired children said that they could not think of anything special to be kept in mind while planning the teaching plan for hearing and speech impaired children. Fifty-six per cent of the teachers who never dealt with hearing and speech impaired children and 35 per cent of the teachers who had dealt with hearing and speech impaired children considered the use of gestures as the best method for teaching the hearing and speech impaired children because the hearing and speech impaired children could best understand the language of gestures.

Forty-five per cent of the teachers who had dealt with hearing and speech impaired children and none of the teachers who had not dealt with hearing and speech impaired children preferred the use of blackboard as the best method since the hearing and speech impaired children could not communicate properly through words or understand language, visual methods were best for imparting knowledge.

However, 20 per cent of the teachers who had dealt with hearing and speech impaired children and none of the teachers who had not dealt with hearing and speech impaired children said that none of the modes for imparting knowledge was sufficient unless and until the teacher concerned was patient with the hearing and speech impaired children.

Regarding their opinion whether the teaching plan for the hearing and speech impaired should be definite or flexible, 52 per cent of the teachers who had never dealt with hearing and speech impaired children and 35 per cent of teachers who had dealt with them said that their teaching plan should be definite. They said that in order to finish the course in time, they would have to follow a definite plan. Others who said that the teaching plan should be flexible did so because of their belief that the hearing and speech impaired children learned at a slower pace than the hearing children.

An equal number of teachers of both groups (60 per cent) said that it was necessary to take the help of parents in designing the teaching plan. The reason was that the child spent most of his/her time at home, so the parents better knew his/her level of disability and whether he/she had behavioural problems. This information could be shared with the teachers so that they could deal with the hearing and speech impaired child accordingly.

All the teachers of both groups said that *outdoor trips* were essential as they facilitated learning and in this way the hearing and speech impaired children also came to know more about their environment.

The opinion of teachers of both the groups was studied regarding the teaching methods for hearing and

speech impaired children and no difference was noticed. When they were asked whether the hearing and speech impaired should be provided with speical techniques or special equipment, all of them had a positive attitude towards it. Out of them, 36 per cent of the teachers who had never dealt with hearing and speech impaired children and 75 per cent of the teachers who had dealt with them preferred the use of hearing aids to putting the hearing and speech impaired child in a special school. They said that in a special school the hearing and speech impaired child would grow amongst those who were "like him/her" and this would affect his/her life adversely later when he/she stepped out of school in a world where the people were in the majority. Others preferred admission of hearing and speech impaired children in a special school where the teachers would be specially trained to deal with them and also plan the activities according to the level of disability of the hearing and speech impaired children

The opinion of the teachers of both groups as regards the *evaluation* of the hearing and speech impaired children revealed no difference.

A majority (80 per cent) of the teachers who had never dealt with the hearing and speech impaired children and 65 per cent of the teachers who had dealt with the hearing and speech impaired children said that they should be evaluated on the basis of their talents and aptitudes like dancing, painting etc.

About 20 per cent of the teachers of both groups said they should be evaluated on the basis of written examinations.

Twenty per cent of the teachers who had dealt with the hearing and speech impaired children said that they should be evaluated through oral as well as written exams. The teachers believed that a partially hearing and speech impaired child could communicate through words, though not like a normal child.

All the teachers in both groups said that it was necessary to take the opinion of medical personnel and parents while undertaking evaluation. This would help the teachers to plan the teaching programme accordingly. The opinion of medical personnel was considered necessary in order to deal with the hearing and speech impaired children in the most effective way.

Similarly, all the teachers of both groups said that it was necessary to share the report of evaluation of hearing and speech impaired children with parents so that they could adopt rearing practices accordingly.

Regarding *enhancing self-concept* of hearing and speech impaired children, there was no difference in the attitudes of teachers of both groups. All of them said that enhancing the self-concept was an important goal in education and that engaging in practical activities and a warm environment enhanced the self-concept of hearing and speech impaired children.

Vendanayagam (1977) also supported a teaching programme for the

disadvantaged children based on the strong conviction that among these children there was a wide variety and range of abilities, aptitudes, talents and interests. It was therefore in the hands of the teachers to unfold the latent qualities and bring about the much needed change in them.

Regarding the comparative attitudes of teachers about carrying out *home visits*, there was a significant difference at five per cent level.

A majority (75 per cent) of the teachers who had dealt with hearing and speech impaired children and only 20 per cent of the teachers who had never dealt with hearing and speech impaired children said that carrying out home visits was necessary in order to seek cooperation from parents. Exchange of ideas with the parents would help both the parents and teachers to deal with the problems of the hearing and speech impaired children like the behavioural problems and the problems associated with their communication.

But a majority (80 per cent) of the teachers who had never dealt with hearing and speech impaired children and only a few (25 per cent) of the teachers who had dealt with hearing and speech impaired children said that it was not possible for the teachers to carry out home visits of each and every hearing and speech impaired child after the hectic daily schedule. Secondly, they also said that visiting each hearing and speech impaired child's parents would reduce the awe in which the child held the teacher.

Regarding the attitude of teachers towards providing *Integrated education* for the hearing and speech impaired children, no significant difference was obtained at five per cent level.

Thirty-two per cent of the teachers who had never dealt with hearing and speech impaired children and 50 per cent of the teachers who have dealt with the hearing and speech impaired children were in favour of integrated

TABLE 2

Comparative Attitudes of Teachers regarding Home Visits

Sample Group	Home Visits should be Carried Out (%)		Mean	S.E.	't'-cal Value
	Yes	No			
Teachers who have never dealt with HSI children (N = 25)	20	80	0.2	0.092	4.07*
Teachers who have dealt with HSI children (N = 20)	75	25	0.75	0 098	
*Significant at 5% level					

TABLE 3

Comparative Attitudes of Teachers towards Integration

Sample Group	Should the HSI be Provided Integrated Education (%)		Mean	S E.	't'-cal Value
	Yes	No			
Teachers who have never dealt with HSI children (N = 25)	32	68	0 32	0.096	1.21*
Teachers who have dealt with HSI children (N = 20)	50	50	0 5	0 114	
*Not significant at 5% level					

education. The reasons given were that this would help the hearing and speech impaired children to interact with the normal children. Moreover, integrated education would also educate the normal children to accept the hearing and speech impaired children.

Rest (68 per cent) of the teachers who had never dealt with hearing and speech impaired children and 50 per cent of the teachers who had dealt with the hearing and speech impaired children said that since hearing and speech impaired children and normal children differed in their scholastic achievement, integration would cause an inferiority complex in the hearing and speech impaired children

Jangira and Srinivasan (1991), however, reported a different finding. They examined the attitudes of 59 educational administrators, 48 heads of public school, 37 special education teachers and 96 general teachers towards the education of disabled children. In general, all subjects had a positive attitude towards the integration of disabled children They did not agree that the integration of disabled children lowered the achievement level of normal children or that disabled children could not participate in curricular activities along with other children.

The results revealed a difference in the following aspects.

1. Forty-four per cent of the teachers who had never dealt with hearing and speech impaired children and none of the teachers who had dealt with hearing and speech impaired children said that they could not think of anything special to be kept in mind while planning the teaching programme for the hearing and speech impaired children. Fifty-six per cent of the teachers who had never dealt with hearing and speech impaired children and 35 per cent of the teachers who had dealt with hearing and speech impaired children said that use of gestures

was the best method for teaching hearing and speech impaired children. None of the teachers who had never dealt with the hearing and speech impaired children and 45 per cent of the teachers who had dealt with hearing and speech impaired children considered the use of blackboards as the best method. However 20 per cent of the teachers who had dealt with hearing and speech impaired children said that the teacher concerned should be patient with the hearing and speech impaired children

2. A majority (75 per cent) of the teachers who had dealt with hearing and speech impaired children and only 20 per cent of the teachers who had never dealt with hearing and speech impaired children said that carrying out home visits was necessary in order to seek cooperation from the parents.

Aspects which revealed no difference in the attitude of teachers of both groups were as follows.

1. All the teachers of both groups had a positive attitude towards providing special techniques or special equipment for a hearing and speech impaired child.

2. All the teachers were in favour of organizing outdoor trips for hearing and speech impaired children.

3. All the teachers of both groups were in favour of evaluating hearing and speech impaired children.

4. All of them felt that enhancing the self-concept of hearing and speech impaired children was an important goal in education to be achieved by teachers.

5. Fifty per cent of the teachers who had dealt with hearing and speech impaired children and 32 per cent of the teachers who had never dealt with hearing and speech impaired children were in favour of providing integrated education.

Recommendations

1. Children who are partially hearing and speech impaired and are integrated in normal schools should be made to sit in front of the class so that they face no problems in listening to and understanding what the teacher says.

2. Children who are fully hearing and speech impaired should be put in special schools. These schools should provide various activities to the hearing and speech impaired children which do not involve the use of verbal language like painting, dancing and games

3. Even the attitude of teachers teaching in schools where the hearing and speech impaired children are integrated with the normal children need to be changed. They also need to realize the capacity, talents, aptitudes of the hearing and speech impaired children which are in latent form and that it is their duty to bring the talents of the hearing and speech

impaired up to a functional level. This can be done by imparting basic knowledge about various disabilities to the teachers undertaking the B.Ed. course. This will help the teacher to deal with the hearing and speech impaired children in an effective manner.

4 One special teacher can be appointed in all the integrated schools who can plan out the teaching programme and activity for the disabled children. They can even recommend to other teachers ways of dealing with the behavioural problems of the disabled children.

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Mainstreaming Culture Specific Paradigms of Integration in Developed Countries

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In recent times there has been a great awakening among people regarding the need for meaningful, relevant education and especially mainstreaming of children with various disabilities. Without this human touch and consideration the dreams they cherish will never be realized and as educators, we can never feel we have given our best

The Jaipur scenario has been similar to that in other cities where the early experiences of children have become so rigid that the child is left with little breathing room. Instead of the programme being child-oriented it is content-oriented

Mayura School, Jaipur felt the growing concern for these children and this generated furious thinking on the future of education and children. Our activity-oriented system encouraged children to build the foundation of life-long learning and this interest is an asset that will stay with them the rest of their lives. To bring out the best in the child was our focus. We also realized that it was of prime importance for regular classroom teachers to be trained in diagnosing teaching strategies for children with learning disabilities because there were several children in many classes who could be identified as children with learning problems. The reasons being various medical problems, dyslexia, aphasia or brain impairment and the system causing tension and strain. Hence we began with remedial teaching practices. The enigma of the child who was unable to learn became our concern. Some children were unable to learn readily and exhibited hyperactive behaviour and others hypoactive behaviour—quiet without excessive movement, and even withdrawn. Further, other children exhibited perceptual disturbances along with the learning problems. We also realized that by identifying these children as pre-schoolers before they en-

> *In the history of education, integration of the handicapped and rehabilitation form a remarkable chapter of an immortal tale of human endeavour. The Jaipur scenario has been similar to the scenario in other cities where the early experiences of children have become so rigid that the child is left with little breathing room.*

countered difficulty, it was possible to diagnose their disabilities and institute remedial education to prevent potential learning problems from occurring. The sooner such high risk children were recognised, the greater were the chances of preventing failure. At times there were problems of early identification, since children do not mature at the same rate, readiness for school often is a matter of timing. Some children did have developmental lags that disappeared by the time they were ready for formal schooling.

Beena was the first child, who came to us at the age of 5 in 1991 (diagnosed as a case of cerebral palsy). She was disabled, couldn't walk much or balance. Her hands were floppy too. She was dribbling and had a tendency to choke quickly. Her speech was not clear at all. She joined the three-year old group. They accepted Beena readily, ever willing to make her comfortable. Encouraged, the teacher motivated Beena to join in all the activities like reciting, singing, dancing, story-telling, drama, art, craft and games. Beena too had a strong urge and tremendous will power to do her best with great sincerity. Whatever she did, even if it were solo attempt, she received great applause and cheering from her teacher and friends. There was a transformation in Beena and within a few months, she was walking quite a distance from the main gate to her classroom; initially she had to be carried. Beena never said "I can't" or "I won't", whether it meant dancing or racing. Her determination, inner strength and will

power led her on and she accepted the learning programme which included cognitive development, perceptual motor development, pre-academic skills and language development. She was also encouraged to take swimming classes. She is presently studying in Class III. She can comprehend well, read and write English and Hindi and in arithmetic, her concepts are very clear and she excels in computers. There are limitations due to time constraints in writing, but she is not willing at times to take a separate programme. Recently at a science exhibition, she took up the responsibility to present information about the human body. With great confidence she faced the crowd. She is ever willing and enthusiastic to take part in swimming, games, songs, dances and elocution. We are now planning her programme for the next few years using a computer. We are confident that Beena, like other children, attain her goal and be honoured for her extraordinary will power and sincere efforts.

Gopi joined Mayura in July 1992, at the age of three. He was declared a case of cerebral palsy and had difficulty in walking and standing. With physiotherapy he improved but he has an awkwardness in gait. Although he was friendly, cheerful and self-confident, at times he would withdraw and seemed disturbed. He exhibited symptoms of behavioural problems and learning problems and it was difficult to discern which handicap was primary. We observed him carefully and waited; his mother followed up his learning process

at home too. Very soon Gopi progressed and did extremely well in the sensory, motor and conceptual areas. He could comprehend and express well too. He had problems at the effective level—anxiety, emotional stability, attention, focus, task persistence and his social behaviour. He is presently studying in Class II and is doing well in academics and co-curricular activities including games and swimming. He tends to get hyperactive, tends to blow up easily, is explosive and at times distracted from the tasks at hand. In the last few months he seems to have matured and has increased his ability to control himself, Gopi is very fond of his teachers and school. He is ever ready to do anything to be in school and he is always very direct, frank, honest with his feelings. He needs to be handled with patience and love..

Pamela (spastic) joined Mayura at the age of six in July'1995. She could walk but had a high steppage gait, poor motor coordination, excessive drolling. She was shy, reserved and dependent She was with the three-year-old age group. She had problems in language and cognitive skills, disturbances in perception (limited speech), thinking, social emotional behaviour. This impeded the normal learning process. She was unable to organize materials and could not comprehend or follow instructions. She was easily distracted and had limitations in fine motor skills too. Since she joined school, she has progressed, mainly because she enjoys coming to school and is cheerful,

enthusiastic and confident. She enjoys the school schedule although it is structured at times. She eats independently. She takes interest in colouring, scribbling, games, singing, dancing. She can follow instructions and makes an effort to say sentences too. Of late she enjoys tracing and loves matching shapes and letters. She is keen on doing these activities at home too. She helps her mother with small errands. She will require training for any one skill at a later level.

The parents of these children have been extremely cooperative during the process of adjustment.

Two other children, Mohan and Nitin, come from local pre-primary schools. Both their parents felt that the pressure on them especially of learning to write had affected them and hence they were not motivated to learn. Both of them were normal in every way. They could read and write, do arithmetic like any average student. But within a few months we observed that they exhibited hyperactive behaviour, easily distracted and continuously in motion. (With Mohan it took two years to come to a conclusion.) They were emotionally disturbed and disruptive. Since Disha had come into existence, before we came to conclusions, we referred them to Smt. Kalra. They were assessed and it was found that both had slight mental retardation. Mohan is presently with Disha and we hope he will be back with us while Nitin is still with us.

Ali was another child with a physical disability. One hand (left) was short. He

came to us in the Nursery group. He was withdrawn and shy but today he has developed so much self-confidence that he is doing extremely well both in academics and co-curricular activities. Motivation, praise and the opportunities given to him in presentations helped him to feel positive about himself.

Ajit (affected by muscular degenerative disease) joined Mayura at the Class III level. He could walk with help. Children helped him to go to the Assembly area and arts and music classes. He did not have any problem with academics. He left after a year due to his father's transfer. He rejoined Mayura in the 1996-97 session at the Class VI level. He has to be carried with the help of an attendant. The advantage of being here is, he did not have to use a staircase to attend any class. He was given the opportunity to participate in the Elocution Competition. The children see to his needs and help him by providing books from the library during the games period. He is not able to cope up with the writing work at times, but he has been doing very well in academics. He has accepted his condition as a way of life and is never seen or heard to be unhappy with anyone or anything.

There are many more I could talk about and these very children could have been ignored, labelled as failures, misdiagnosed by specialists, misunderstood by parents, teachers and often discarded by society.

The success of a mainstreaming programme is strongly influenced by the teacher's attitudes. So we stressed on

1. Inservice education which is an essential preparation for mainstreaming programmes.
2. Pupil placements, that calls for sensitive administration. Educational assessment and diagnostic teaching were emphasized.
3. A programme that was flexible and modified.

The entire experience has been a challenge and extremely rewarding to our conscience because we felt that we were extending to these children the full dignity of a human being. We can have very lofty ideals, but to implement them we need the best people. This is a very noble cause and we need sincere, dedicated hands not just qualified persons. The government and non-government sectors should come forward to help the institutions wedded to this cause by sponsoring candidates for training to other places to share the up-to-date developments in education and technology.

Slow Learner

How to Make the Child a Self-Starter

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Modern researches have shown that the years between three to ten are of great importance. The first few years of life are very important, because the impressions formed at this stage may last forever or for a very long time. During these years the child adopts habits, attitudes, behavioural patterns and values from the environment and learns to become a well adjusted member of the society to which he/she belongs.

> *High expectations by a teacher can encourage a student to do better, whereas low expectation may result in a mediocre performance. Evidently a teacher's high expectation alone can create a positive self-fulfilling prophecy in a student, unfortunately low expectations seem to be just as potent and can be a source of academic failures.*

Failure experiences of any kind frequently leave severe marks on a child's personality. A fundamental need of every individual is the need for achievement. When this is rendered impossible in a given area, such as reading, writing, etc, various forms of personality maladjustments are likely to make their appearance.

Negative feedback occurs, when children see their efforts to master a skill or concept met with disapproval, disinterest or even scorn. This gives a child a sense of failure and if repeated he or she comes to avoid challenges, and to remain dependent on parents and teachers for information and decision making.

In contrast, repeated success or tasks together with praise from parents and other adults, produces more curiosity, more independent effort and increased self-esteem—all of which fuel the child's competence motivation. The result is optimistic, confident, inquiring youngsters.

The sensitivity and responsiveness of a child's nervous system are major factors in shaping personality. Child psychologists recognize three basic categories of nervous temperament: (1) difficult, (2) quiet or slow to warm up, and (3) easy. They are quick to add that there is an overlap among these categories and much variation within it.

The so-called difficult child is very active and intense. He or she has a low threshold of tolerance for all kinds of stimulation and frustrates easily.

The quiet or slow to warm up child tends to be withdrawn. Because this type of child makes so few demands and is so unresponsive he or she is in some ways more of a challenge than the difficult child.

The third category — the easy child — is the most common temperament among children. We find these children to be generally in a good mood, usually adjustable and pleasantly responsive to people and situations most of the time.

Disruption and rigidity in the play patterns of *emotionally disturbed* (difficult child) children frequently have been noted. Age-inappropriate play, deviation in play and unpopularity with peers have consistently been found to be related to anxiety and emotional disturbance in children (Singer, 1977).

Who are Slow Learners?

1. A shy child.
2. A child who is a low achiever.
3. A child who makes a few demands.
4. A child who is thought of as unattractive, stupid or dishonest.
5. A child who wets his pants in the classroom.
6. A child who gets a bad report card.
7. A child who repeats a year.
8. A chid who feels loosing the old peer group's approval.
9. A child who feels his self esteem has been blown.
10. A child who misses out on extra-curricular activities.
11. A child who lags behind in the normal give and take of growing up.
12. A child who stays out of class discussion.
13. A child who remains in the fringes of the playground games.
14. A child who never laughs until everyone else does.
15. A child who is loud mouthed
16. A child who bullies others.
17 A child who is pushy.
18. A child who loses peer approval.
19. A child who has poor self-image.
20. A child who needs special help in dealing with rejection.

How to Make the Child a Self-Starter

Studies suggest that two out of five children are shy. The degree varies by age. Research indicates that by Class VIII, half of the boys and 60 per cent of the girls are shy. These children mark their shyness by staying out of class discussions remaining on the fringes of the playground during games and never laughing until everyone else does.

Sometimes, the shy child may appear just the opposite. A surprising number of classroom bullies, and many loud-mouthed pushy adults are actually shy, according to Zimbardo.

Psychologists and societies agree that there is a point when a child loses most of its babyishness and some years later, another point when a child becomes an adolescent. Between these two milestones fall the middle years of childhood. Sometime around the ages of five to seven a major new thrust begins in a child's social and intellectual life. It is the time when children typically begin their first social responsibilities such as watching over younger siblings, doing chores around the house or taking an active part in religious observations.

Around the age of six or seven children normally begin to be able to think with increasing logic about objects or experiences in their everyday lives. For example, they become capable of what psychologists call a "reversible mental action" figuring only for themselves, that if $2 + 4 = 6$ then $4 + 2 = 6$. The Swiss psychologist, Jean Piaget saw this as the start of what he called "concrete operational intelligence," meaning the ability to think logically about concrete things.

From concrete operational intelligence it is relatively short journey to more abstract thought, holding two or more conflicting ideas in the mind at the same time as well as thinking morally. In the middle years of childhood, the mind develops the capacity to distinguish right from wrong,

hear another person's point of view, play games according to rule and master the sequential mental tasks upon which reading, arithmetic and other tasks are based.

As children attain cognitive skills they come to increasingly seeing their minds and their knowledge as a source of strength that they can rely on. This becomes very important as children move on to the next developmental level, adolescence, which typically begins around the age of twelve.

Many psychologists believe that human beings are born with some survival instinct for competence, a drive to master the environment and thereby thrive within it. This so called competence motivation implies even the very young child to be constantly curious, constantly experimenting.

Babies are not born sociable. A child begins life in a state of egocentricity in which he/she is the centre of the universe and everyone around is apparently perceived by the child as an extension of its being.

In experiencing the give and take of relationship with its classmates and in becoming aware of the feeling of mutual love and trust, a child moves beyond self-involvement to interest in other people. Thus begins the acquisition of the social skills that enable the child to function in the wider world. Friendship can be a testing ground for how to express and confront anger and aggression, says Dr Eugene Urban, a clinical psychologist at the Wilder Child Guidance Centre in St Paul, Minnesota. Moreover, he says

experience of getting along with friends can teach children important lessons about balancing assertiveness with compromise.

Children learn the habits or behavioural patterns that they observe around them. At the same time they acquire attitudes and values which are not so easily seen in the environment. It is difficult to know what attitudes and values they are learning. *Both attitudes and values are difficult to teach, because they concern feelings and thoughts. It may be seen that young children have strong feelings.* If they are guided properly by creating opportunities for them to express their feelings constructively they will develop the right attitude.

Studies make clear that once a child starts school, the respect and liking of peers become immensely important. The opinion of friends sometimes masters more than the approval of teachers and parents. Studies show that the loss of friends and particularly rejection by the group are painful and humiliating for very young children.

Peers play a more difficult role in children's development than do families. Although the child's relationship with parents is more intense and enduring than with peers, interaction among age-mates is more free and egalitarian. This quality of relationship with peers permits a new kind of interpersonal experimentation and exploration and most particularly a new kind of sensitivity which will serve as one of the corners-tones for the development of social competence, social justice and the capacity of love.

Trends towards increased peer interaction continue throughout the pre-school and elementary school years. In a recent investigation over 400 children ranging from one to 12 years of age were observed at homes or outdoors in a middle-class neighbourhood (Ellis, Rogolf, and Cromer, 1981). It was observed that children were alone for 26 per cent of the time. Solely with other children in 46 per cent of the observation and with both adults and peers for 15 per cent of the time.

Companionship with same age peers increases with age up to the age of seven. Children are just likely to choose an opposite sex companion, but after this age boys associate with boys and girls with girls more than opposite sex play partners.

Children's peer interactions not only provide a critical opportunity to acquire certain social competencies but also have been found to play a important role *in the development of self-control and in working through or modifying problem behaviour in children.* (Hartup, 1983).

Most studies of cooperative learning have demonstrated a positive impact on self-esteem, helping behaviour, interpersonal liking, mutual concern among peers, cooperation and attitude towards school and learning (Minuelin and Shapiro, 1983). Moreover, Slavian and his colleagues (Slavian, 1983; Leavey and Madden, 1984), report *greater increases in mathematical skills in cooperation classroom in comparison with control classes.*

Cooperative environment involves small groups of students who work together to master learning materials. Often the group is heterogenous, with children of different sexes, abilities and ethnic backgrounds working together for common problems. The goal is to maximize the learning of all students and to increase the mutuality of their relationships with children different from themselves.

To overcome shyness, help the shy child to play with younger children. Shyness expert, Lyne Henderson, suggests the following method. Choose younger playmates for the shy child. The shy older child becomes the "looked up to leader". She also suggests finding "Mother-hen", a child who is warm and not too aggressive and takes the shy child under his/her wing.

Conducting group activities according to their interests can help to bring children out of shyness, forging ahead in which all become part of the group. Hence care should be taken to make sure that everyone participates and the shy child is not left out.

Children who are low achievers often have a record of failure and tend to be passive participants in any learning exchange. Low achievers would learn better when placed in the role of peer-teacher than when studying alone, due to increased motivation and involvement in tutoring situations.

Not only can peers aid in controlling their classmates, but they can function as peer-teachers as well. Older children are sometimes cast in the role of assistant teacher and given responsibility for teaching younger children.

Since there are few objective ways in which children can measure their characteristic values and abilities, they turn to other people, particularly to peers. They use others as a yardstick to measure themselves. This process of social comparison is one basis of the child's self-image and self-esteem.

Children acquire a wide range of knowledge and a variety of responses by observing the behaviour of their peers. Since imitation is followed by positive outcomes in the form of maintained or increased social interaction, imitation may be an important way of maintaining such social interaction. Children may also learn new social skills through imitation, since they tend to imitate the dominants and (presumably) socially skilled members of the group (Grusec and Abrmvitch, 1982).

Some models are more likely to be imitated than others. Children tend to imitate peer models who are warm and rewarding, are powerful, are rewarded by others, and who they perceive as being similar to themselves (Hartup, 1983).

Does being imitated have any effect on the model? Serving as a model can increase self-control. Children who had served as self-controlling models for other children subsequently showed more resistance to temptation themselves (Tonermore and Ashley, 1978).

It has been found that the use of social comparison with the peer group

as a means of self-evaluation in children increases markedly in the early elementary school years (Harter, 1983, Ruble, Boggiano, Feldman and Loebl, 1980). The child's self-image and self-acceptance are closely associated with how he is received by peers.

A thorough understanding of the present opportunities by the children in classroom activities could enable teachers to reform his/her approach in achieving 80 per cent MLL competencies. Understanding the difficulties faced by the students while participating in the activities could enable the teacher to change his/her attitude towards children Even though the personality of each and every child varies, it is necessary to know the ways and means to make all children participate in the classroom activities.

High expectations by a teacher can encourage a student to do better, whereas low expectation may result in a mediocre performance. Evidently a teacher's high expectation alone can create a positive self-fulfilling prophecy in a student, unfortunately, low expectations seem to be just as potent and can be a source of academic failures (Harter, 1983; Ruble, Boggiano, Feldman and Loebl, 1980). The child's self-image and self-acceptance are closely associated with how he/she is received by peers.

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Organization of Learning for Children with Special Needs

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Needs of the Learner

LEARNING can only take place in response to the felt needs of the learner. When the need of the learner is strong enough and he sets definite goals for achievement, learning will be more effective. The education process must be geared to the needs of the learners. The teacher must show them their needs, only then can he make them start learning.

> *Learning is a process which involves changes occurring over a relatively short period of time which enables the learner to respond more adequately to the situation. There are various aspects of the process of learning.*

Readiness to Learn

Learning readiness is essential for effective learning. Specific learning will not occur until children are ready for it. Readiness is the capacity and willingness to learn. In a very true sense all studies of physical, intellectual, social and emotional growth bear directly upon the state of readiness. If the level of learning capacity is higher than that on which the instruction is pitched then to the children, the materials of instruction are only 'kid stuff'. If the materials are pitched too high for the children's capacity, they become frustrated, and use those mechanisms of adjustment common to frustration that is, withdraw, overcompensate, act aggressively or daydream. Whatever else is done there is no longer joyful participation in learning the materials of instruction. The learning readiness of children is quite varied. No one learns at an even rate; there are hills, valleys and plateaus in any curve of learning that covers an extended period of time.

Nothing is gained by attempting to teach someone who is not emotionally,

physically, intellectually and experientially ready for what is to be taught. Seeing whether the children are ready for certain kinds of learning is a task that calls for skill and sensitivity. Sometimes children are not ready for a certain subject if it is presented one way, but can learn from a different kind of presentation. So a teacher must be careful about these. The teacher must understand the experiential background of children in order to decide whether they are ready for certain kinds of learning.

Because of the nature of the mass education, we can achieve readiness all the time of all students. At any given point of time, some children are over-ready and some are not ready. Such individual differences are inevitable. But as teachers come to understand their students better as individuals than as groups, they will improve the efficiency and effectiveness of their teaching so that the variations of the law of readiness will be fewer in number.

Situation

The main task of the teacher is to organize good learning situations for the child. Informal learning situations are found in the home environment, community environment and school environment of the child. Formal learning situation can be provided by the teacher to make learning systematic.

Interaction

It is just the process of responding to a situation and getting satisfaction or otherwise from it. Learning is caused by this interaction. The more numerous and more satisfying the interactions are, the better the learning will be. Interaction can be in the form of observable physical movements or emotional reactions or herbal reactions. The learner experiences an intense joy in solving problems, or when he is able to achieve an answer.

Experimental Study

It is based on the tests conducted for the students of primary schools in urban, semi-urban and rural areas. It is common to find more than 50 per cent of the children's assessed work indicating that they are facing learning problems such as

1. Confusion of letters which are similar in shape
   d and b, u and n, u and w, etc.

2. Confusion in sound v and b or f

3. Right-Left confusion 'was' and 'saw'

4. Transposal confusion – 'left' and 'felt'

5. Difficulty in sticking to the line when reading

6. Mispronounces and guess reads, 'steep' as step', 'Animal as 'Anil'

7. Bad handwriting.

8. Errors in spelling, 'front' as 'frunt', 'praise' as 'price'

9. Leaves out capitals and punctuation marks

10 Letters are not written properly —

forgetting to dot the i's and cross the t's

11. Not able to take notes properly

12. In mathematics they are not able to add taking carry over

Example:

$$
\begin{array}{r}
736 \\
254 \\
\hline
9810
\end{array}
$$

13. Do not subtract properly

Example·

$$
\begin{array}{r}
358 \\
-149 \\
\hline
211
\end{array}
$$

14. Not able to multiply properly

Example·

$$
\begin{array}{r}
123 \times 25 \\
615 \\
246 \\
\hline
861
\end{array}
$$

15. Not able to divide properly

Example: 25) 200025 (801

$$
\begin{array}{r}
200 \\
\hline
000 \\
\hline
025 \\
25 \\
\hline
00
\end{array}
$$

$200025 \div 25 = 801$

These are the common learning disabilities observed among the students.

Major Outcomes

To develop skills of (i) expression, (ii) writing, (iii) reading, (iv) mathematical operations.

Implication of the Findings

When a child appears to have a learning problem, instead of punishing the child for being lazy or throwing him out of class for "being good for nothing" or disruptive, teachers should provide remedial teaching. These are based on individual problems and abilities. For this greater understanding of the problem, specialized approaches in teaching are necessary, as standardized procedures are not always suitable.

The specialized approaches are as follows.

1. Help the child read longer words by dividing syllables with a pencil line.

2. Give the child one or two words to learn at a time, not a list.

3. Give the child plenty of time to read.

4. Do not make the child change his/her writing style for the sake of neatness only.

5. Do not think the child is dreaming if he/she looks away from the book he/she is reading. There may be difficulty focussing on the page or finding the place where he/she stopped reading.

6. Do not ask the child to read in public or compare him/her with others, especially siblings.

7. Praise the child for what he/she can do Build on his/her strength.

8. In mathematics, simple and effective teaching is necessary. For addition teach numerals and place values effectively, stage by stage.

9. *Example:* Add:　　736
　　　　　　　　+ 254

Stage (i):　　736 = 700 + 30 + 6
　　　　　　+ (254 = 200 + 50 + 4)
　　　　　　　　　　= 900 + 90 + 0

Ans:　　　990

10. In Subtraction: Number written in expanded forms is taught properly, stage by stage.

Example: Substract:　358
　　　　　　　　　　　　−149

Stage (i) :　　358 = 300 + 50 + 8
　　　　　　　149 = 100 + 40 + 9
Stage (ii) :　35$\overset{\cdot}{8}$ = 300 + 40 + 18
　　　　　− (149 = 100 + 40 + 9
　　　　　　　　　　200 + 0 + 9

Ans: 209

11. In multiplication, the place value of both multiplicand and multiplier should be taught well stage by stage.

Example:　123 × 25

Here, 25 is the multiplier, in which 5 is in Unit's place and 2 is in Ten's place. Hence, multiplying by 2 always gives Ten's value and more.

　　　　123 × 25
　　　　――――――
　　　　　615
　　　　2460
　　　　――――――
　　　　3065
　　　　――――――
Ans: 3065

12 In division, the place value of dividends should be taught well. Do the division stage by stage for every numeral of the dividend, higher place to lower place.

Example:　200025 ÷ 25

```
          008001
      25) 200025 (
          0
          ――
          20
           0
          ――
          200
          200
          ――――
          0000
             0
          ――――
            02
             0
            ――
             25
             25
            ――――
             00
            ――――
```

Ans: 8001

These are a few examples for different types of remedial programme planned for the child for easy and effective learning.

Mainstreaming of the Handicapped

A Necessity or a Choice?

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MAINSTREAMING of the handicapped has been the focus of attention all over the world in the last few decades Besides the philosophy of egalitarianism, the normalization movement in Scandinavian countries and the civil rights movement in the United States has further strengthened the process of mainstreaming of the handicapped. The process of mainstreaming begins in schools when handicapped children receive their education alongside non-handicapped children. Mainstreaming of the handicapped provides an opportunity to other children to know the abilities and difficulties of the handicapped.

This article focuses on the issue of mainstreaming the handicapped in ordinary schools. The arguments of professionals of special schools and of mainstream schools are also examined to ascertain whether mainstreaming is a necessity or a choice. The importance of legislation in determining the education approach for the handicapped has also been discussed. Development of special education in India after 1947 has been given to elaborate arguments for and against mainstreaming.

There are mainly two schools of thought: (1) Those who support special school provision for the education of the handicapped, and (2) Those who advocate the provision of mainstreaming, i.e., handicapped children should be taught alongside non-handicapped children in ordinary schools. The former approach maintains that handicapped children can get proper attention and care in special schools only where specially trained staff and other resources are available.

The latter assets that special schools provide education in a segregated environment which is not conducive to the normal development of handicapped children. Jamieson et al. (1977), however, contended that if handicapped children are to live within the normal community, they should not be segregated for their education in special schools; rather, they should be imparted educational instructions alongside non-handicapped children in ordinary schools. There is a worldwide consensus for educating the handicapped along with non-handicapped children (UNESCO, 1988).

Legislation for Special Education

The debate over special school approach and mainstreaming of handicapped children in ordinary schools emerged as a consequence of the growing popularity of the latter. Professionals of both schools of thought argue that their system can provide the most appropriate education to the handicapped. These theoretical arguments aside, legislation determines whether handicapped children should be educated in special schools or in ordinary schools. The Education Act of 1944 in the United Kingdom recognized the need for the education of the handicapped and recommended the establishment of special schools (Fish, 1989). The Warnock Report (1978a) in the United Kingdom provided a basis for the Education Act of 1981 which strongly favours mainstreaming of handicapped children in ordinary

schools. Legislations have also been enacted in Italy and the United States to facilitate mainstreaming of the handicapped in ordinary schools.

Pressure groups can play a vital role in enacting legislations for the education of the handicapped. Parents of handicapped children in the United States played an important role in this direction. They demanded that their handicapped children be educated alongside non-handicapped children in ordinary schools and all facilities be provided for this purpose When ordinary schools refused to admit handicapped children, the parents went to court, where the decision was invariably given in their favour. As a result of the court decision and public pressure, Public Law PL 94-142 was enacted in 1975, according to which all handicapped children should be educated in the "least restrictive environment" (Bedine and Blackhurst, 1985). No school in the United states can refuse admission to children with handicaps.

Denmark and other countries also experimented with integrated education for the disabled and found it to work efficiently. A close cooperation between special schools and ordinary schools was found in places where the scheme of integrated education operated (Jamieson et al., 1977).

On the contrary, there is no legislation for education of the handicapped in India. There is an urgent need for enacting legislation in India with regard to the education of handicapped

children. Legislation will not only ensure the provision of education to all handicapped children, but also give guidelines with regard to approaches to the education of the handicapped, i.e., mainstreaming or special school approach or both.

In spite of success in educating the handicapped through special schools or through mainstreaming, it cannot be claimed that only one approach will be applicable to all countries or to all pupils of the same country. Both mainstreaming and special schools are playing an important role in the education of the disabled. Efforts for the education of the disabled in India were made by individuals and voluntary organization in the past, as opposed to parental efforts in the United States. These efforts by individuals and organizations were made without any legislative support.

Development of Education for the Disabled in India after 1947

Article 45 of the directive principles of the Indian Constitution states that all children in the age group of 6-14 years would be provided free and compulsory education, and this task would be complete within a period of ten years from the commencement of the Constitution in 1950 (Bhatia et al., 1981). However, the target of "education for all" is a myth so far.

The word "all" implies that no child, including the disabled, should be excluded from the provision of free and compulsory education. A number of schools for the education of the disabled were established in India after 1947. In India too, as it was in other countries, the education of the handicapped was treated as a matter of social welfare (Thorburn, 1990). The public opinion in the country was also in favour of special schools. That is why the Secondary Education Commission (1952-53) recommended the establishment of special schools for the education of the handicapped. The Commission felt that the placement of handicapped children in special schools was necessary for two reasons: (1) the education of other children would not be hampered, and (2) the handicapped children would get proper attention and care in special schools.

The Education Commission (1964–66), however, felt that segregation of handicapped children in special schools was not desirable. The Commission recommended that the handicapped children should be encouraged to attend ordinary schools alongside non-handicapped children, and all necessary facilities should be provided for this purpose.

In 1974, the Scheme of Integrated Education for the Handicapped was accepted by the Ministry of Social Welfare to give incentives to handicapped children attending ordinary schools. Special pay, in addition to regular pay, was offered to the special teachers working in the integrated education scheme. This encouraged children with disabilities to attend ordinary schools along with other children, and some progress was made in the direction of mainstream education.

The International Year of Disabled Persons, 1981, was a milestone in creating public awareness regarding the educational and rehabilitation needs of the handicapped. A sample survey of handicapped persons was conducted by the National Sample Survey organization (NSSO) in 1981. According to the survey, there were 12 million handicapped people in India. This survey, however, did not include the population of the mentally handicapped (Government of India, 1986).

The National Policy on Education (1986) was a significant development in the education of the handicapped in India. The policy paid adequate attention to the education of the handicapped to achieve the constitutional objective, education for all. Having reviewed the existing situation of the education of the handicapped in the country, the policy recommended that children with mild and moderate handicap should attend ordinary schools alongside non-handicapped children and support and facilities should be provided for this purpose. Children with severe and profound handicaps should attend special schools where resources and expertise are available. It also recommended the establishment of more special schools to cater to educational needs of severely and profoundly handicapped children.

Another significant achievement of this policy was that it laid emphasis on research and development in the area of special education. The National Council of Educational Research and Training (NCERT), New Delhi, and other universities undertook the task of research and development in the area of special education. The National Institute for the Visually Handicapped, Dehra Dun, undertook many projects to conduct research in this area. The policy also recommended that both preservice and inservice teacher training programmes should be initiated to prepare special teachers to cater to the educational needs of mild and moderate handicapped children in ordinary schools. The NCERT designed a Multi-category Teacher Training programme to train special teachers to help mainstream handicapped children. A number of teachers were trained through Regional Colleges of Education to work in schools where handicapped children were being mainstreamed. The Scheme of Integrated Education for the Disabled was revised in 1987 to provide more facilities to handicapped children in mainstream education (NCERT, 1988).

The National Policy on Education (1986) was reviewed and the revised Programme of Action (1992) was prepared. It was estimated that about 12.59 million children with disabilities were to be provided education in the school system. Education of children with disabilities was considered a part of the general education system, as was the case in the United Kingdom where the Education Act of 1981 emphasized that education of the disabled was a part of the general education system. The Programme of Action (1992) in India

mentioned the provision of providing vocational training to the handicapped through ITIs and other vocational institutions. The Scheme of Integrated Education for the Disabled was also revised again in 1992 in view of the changes in the Programme of Action.

A Debate between Professionals of Special Schools and of Mainstream Education

Unfortunately in India a large body of research in the area of integrated education of the disabled does not exist. Therefore, the following arguments are presented by the author of this article on the basis of his own experience. Before presenting arguments of the special school system and mainstream education, it is necessary to understand what is meant by integration.

Booth (1987) defined integration as the process of increasing the participation of children and young people, the families, communities and teachers in the educational and social life of ordinary schools and colleges. The Centre for Studies on Integration in Education in the United Kingdom defined integration as full participation of all children in the educational and social life of ordinary schools. These two definitions include almost all elements of integrated education.

Different countries use different terminologies for integration. For instance, the term "mainstreaming" is used in the United States (Benton, 1984); in Scandinavian countries the term "normalization" is used

(Wolfensberger, 1972). In recent years the term "inclusion" has been used for integration in Canada (Soni, 1993).

There is a debate in India, as in other countries, over the issue of educating handicapped children through mainstreaming in ordinary schools or referring them to special schools only. Both sides have strong arguments in support of their philosophy, but the placement of a handicapped child in a particular system depends on the individual educational needs. The profesionals working in special schools put forward many arguments against the mainstream education system and give reasons in support of special schools provision.

Arguments of Special Schools

The first possible argument of special schools against the mainstream approach is that the attitudes of society towards the handicapped are not very encouraging. In the absence of positive attitudes of the society it is not possible for handicapped children to develop their full potentialities in ordinary schools. On the contrary, special schools provide an appropriate environment for the all-round development of handicapped children. Special schools employ special staff who are trained and better equipped to help these children in overcoming their problems.

The second probable argument of special schools against mainstream education is that no facilities are available in ordinary schools for the education of handicapped children. In

the absence of necessary facilities for their education, mainstreaming of the handicapped is not possible. Special schools further contend that special teachers are not available in ordinary schools to support the handicapped children in their education. There is also a scarcity of appropriate reading and writing material for the handicapped in ordinary schools. Many school buildings are not accessible to children with locomotor handicaps. Removal of architectural barriers will take some time and these children cannot be deprived of education until then. Special schools, on the other hand, employ specially trained staff to help these children. These schools are also equipped with special reading and writing material. They provide appropriate environment to the handicapped to develop their potentialities.

The third likely argument of the special schools is that mainstream education cannot cater for individual differences. On the other hand, special schools can cater for individual needs of these children owing to the availability of special material and expertise.

The fourth possible argument of special schools is that many of the schools, particularly in villages, are ill-equipped to meet the needs of mainstream education. Special schools, on the contrary, have all the facilities including those of boarding and lodging, where children with handicaps can stay and get proper education.

Though there is an element of truth in the reasoning of professionals of special schools, most of the arguments are one-sided. It seems that the scheme of integrated education for the handicapped in India has created a fear amongst professionals of special schools. They seem to think that the implementation of integrated education for the handicapped is a threat to the existence of special schools and, consequently, to their professionalism. But this is not true. The special schools were established to meet the educational needs of those children whose needs could not be met in ordinary schools. Hegarty (1987) contended that special schools are the subsystem of a broader system of education and they were established to meet the educational ends of those children whose needs could not be catered for in ordinary schools. There are, and there will be children who will require special school placement and the expertise of special schools. Therefore, there is no reason for anxiety.

Arguments of Professionals of Mainstream Schools

There are equally strong arguments from those who support mainstream education for the handicapped. They believe that special schools provide education to the handicapped in a segregated environment which creates numerous problems for them. These children are not adequately prepared in special schools to meet the challenges of life in the community, and they find it difficult to adjust themselves to the community. Supporting this viewpoint,

Fish (1989) said, "Completely separate special education, however severe the need, is a very inadequate preparation for life in the community" (p 67).

The argument that social attitudes for mainstreaming of the handicapped are not encouraging and that the environment in ordinary schools is not conducive for all-round development of the handicapped, is a vicious circle. If attitudes are not positive, efforts should be made to change them. If efforts are not made, attitudes may never change. Furthermore, it is quite possible that the association of non-handicapped children with the handicapped would help to develop positive relationships with positive attitudes (Fish, 1989) Many handicapped children attend ordinary schools and they are doing well both socially and academically. Mainstreaming helps develop tolerance and positive attitudes towards each other. Hegarty (1987) cited the study by Hegarty and Pocklington in 1981, which found a broad consensus among teachers, parents and pupils that they were benefited in terms of social and emotional development through an integrated education programme. It promoted the realistic acceptance of individual handicapping conditions. Negative relationships, such as teasing, were comparatively rare. The incidence of untoward behaviour and bizarre mannerisms were greatly lessened.

The second argument that adequate educational facilities for the handicapped are not available in ordinary schools and, therefore, mainstream education cannot meet the needs of handicapped children, is wrong for two reasons:

1. Developing countries like India have limited resources, and, therefore, all educational facilities for the handicapped in ordinary schools cannot be arranged unless they are admitted.

2 Most of the special schools also do not have adequate facilities for the education of handicapped children, as was pointed out in the National Policy on Education (1986). Highlighting the limitations of special schools, Hegarty (1987) stated that these schools have a very limited range of choice in the curricula. Pupils do not have much choice in optional papers in special schools.

The third argument of professionals of special schools is equally unacceptable because individual differences are also found amongst non-handicapped children as they are among the handicapped. Therefore, handicapped pupils with average abilities can meet the challenges of education in ordinary schools. However, if there are children who cannot cope with the problems in ordinary schools they may be referred to special schools. Supporting mainstreaming of the visually handicapped, Dawkins (1991) stated that the aim is to integrate children, wherever possible, into their neighbourhood school with whatever special support is appropriate to their needs.

The fourth argument is also not acceptable because it tries to justify the existence of special schools, not

difficulties of children with handicaps. It is true that there are difficulties in rural areas, but this cannot be the sole justification for the existence of special schools The Warnock Report in England (1978a) also emphasized the need for integration and expressed "...determined opposition to the notion of treating handicapped and non-handicapped children as forming two distinct groups, for whom separate provision has to be made" (Hegarty, 1987)

As far as India is concerned, the foregoing arguments do not have conclusive research evidence either in favour or against mainstreaming. Actually speaking, there is a scarcity of research in this area. Very few scholars have undertaken research in the area of special education. Therefore, any claim either in favour of or against mainstream education cannot be accepted as the final conclusion. On the other hand, there have been more research studies in the United States and in the United Kingdom. Hallahan and Kauffman (1988) cited the studies carried out in the United States by Gottlieb and Gottlieb in 1983, and Strain in 1981 for the period 1950-1980. These studies revealed that there was a lower acceptance of handicapped children by the non-handicapped peers in the regular classroom. The efficacy studies carried out after 1980 do not reach any conclusion and mixed results are presented. Similarly, Barrow and Milburn (1990) maintained that the findings offered by empirical research on the effectiveness of mainstreaming were not encouraging. They further contended, "While mainstreaming may benefit some students, some ages, in some locations, programmes designed to apply to all handicapped students appear misguided." Cornell (1987) also stated that pupil involvement is necessary to ascertain whether a child is better placed at mainstream than at a special school. Fish (1989) stressed that educational needs of children should be decided not on the basis of what professionals think, rather, on the basis of what children actually think they need

The Whole School Approach

The whole school approach is essential in schools where handicapped children are mainstreamed. According to Dessent (1988) the whole school response will essentially be a response to meeting the individual needs of children. A mainstream education programme cannot be successful unless concerted efforts are made by all members of the staff. The special teacher alone cannot do everything, and, therefore, there has to be a whole school approach to make mainstreaming of the handicapped students a success.

The role of the head of the school is vital in facilitating and leading curricular and organizational changes. The whole schools approach has to be shared by all members of the school staff.

The role of the classroom teacher is very important in implementing integrated education and in developing

relationships between handicapped and non-handicapped children. Dessent (1988) cited the comments of Luton who stated in 1986 that the ordinary classroom teacher is the most important and undervalued resource that a school has, and the practice of integration requires them to be even more flexible and inventive, not always with sufficient additional resources. Luton further added that unless there is a strong element of shared responsibility and shared problem solving, together with a desire to facilitate learning for all abilities, a school will never be able to make much of a whole school policy for students with special educational needs.

Is Mainstreaming a Necessity or a Choice?

There are a number of questions which need to be answered before arriving at any conclusion with regard to predilection to special school approach or mainstreaming. These questions can be

Is it possible to provide education to all handicapped children through special schools only? Is it a feasible solution to establish special schools all over the country in view of the enormous expenditure and vast area of the country? Is it desirable to educate handicapped children in a segregated environment when they have to live in society with other non-handicapped people later on? Is it appropriate to keep these children away from parents? Is it justifiable to keep the society ignorant of the abilities of the handicapped?

The number of handicapped people in India is estimated to be well over 12.59 million, whereas the number of special schools to cater for all handicapped children is between 800–1000 (POA, NPE, 1986). In view of the large population of the handicapped in India and the limited number of special schools, mainstream education for the handicapped is a necessity along with special schools, if "education for all" is to be provided It is just impossible to establish special schools in all villages and cities. Therefore, the only viable solution available to the country is to provide education to all handicapped children through integrated education approach

Establishing special schools all over the country is an expensive business as it involves an enormous amount of finance. Every new special school will need separate buildings, separate office staff, caretakers, teachers, aids and equipment, boarding and lodging facilities, etc. It is impossible for countries like India to establish special schools in all villages and cities. If it were feasible, special schools would have been established all over the country by now Furthermore, India is a huge country and establishing special schools in all villages and cities is virtually impossible. Mainstreaming of the handicapped in ordinary schools, on the contrary, lessens the amount of expenditure because handicapped children stay with their parents or guardians, and attend ordinary schools along with other

non-handicapped children.

Educating handicapped children through special schools creates many emotional, behavioural and social problems. Special schools impart education to handicapped children in a segregated environment. Handicapped children are separated from their parents for their education in special schools. Thus, these children are deprived of parental love and affection which is necessary in the formative years of all children. This separation can cause emotional disturbances in handicapped children leading to undesirable behavioural problems later on. Many of the undesirable behaviours (mannerisms) develop due to emotional problems and segregated environment of special schools. Parents usually control undesirable behaviours of their children by pointing them out. Handicapped children in special schools are rarely told about it. In this way, mannerisms interfere in their social integration when these children come out of special schools. Mainstreaming can help in preventing undesirable behaviours as the interaction of the handicapped with non-handicapped children would reduce occurrence of such behaviours.

Social attitudes towards handicapped persons are determined by the information society receives about them. Many people are ignorant of the abilities of handicapped persons. Consequently, these people develop negative attitudes towards the handicapped. Special schools help to perpetuate the myth that handicapped persons are different and they need special schools for their education. Non-handicapped children rarely get opportunities to know the handicapped personally. Consequently, negative attitudes persist and handicapped persons do not get a respectful place in society. These negative attitudes become a stumbling block in the rehabilitation of this group of persons. Very few people treat handicapped persons with respect. The most unfortunate situation arises when handicapped persons are denied respectable jobs on account of their handicaps. Who is responsible for perpetuating the myth that handicapped persons are different from others? The responsibility for perpetuating this myth can partly be attributed to social attitudes and partly to professionals of special schools.

Then, how can this myth be proved wrong? The most effective and useful instrument for social change is the mainstream education of the handicapped. Children accept things on the basis of their experience and on the basis of what teachers and parents tell them On the contrary, adults are difficult to change on account of their prejudices which they inhent from their elders. Therefore, it is the responsibility of all teachers, including professionals of integrated education settings and of special schools, to launch an awareness programme regarding abilities of handicapped persons. This will help in creating awareness in the society and in changing negative attitudes towards the handicapped.

In view of realities presently dominating the society, mainstreaming of the handicapped in ordinary schools is a necessity, not a choice. Mainstreaming can help in rehabilitation of the handicapped and give them a respectable place in society.

The special schools can still play an important role in the education of the handicapped. Jowett et al. (1988) laid emphasis on link arrangements between special schools and ordinary schools and recommended the movement of teachers and students from one school to another. This may not be possible in practice; but suggestions for special schools to act as resource centres and provide peripatetic services and advice to mainstream schools appear to be very useful in the Indian context. Thus, there is a need for mainstream education as well as special school provision.

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Cognition and Expression in the Context of the Prelingual Deaf

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COGNITION plays a crucial role in learning and it is difficult to imagine any learning without the use of cognition. Cognition in a layman's term is 'knowing something'. It leads to perceiving, understanding, reasoning and problem-solving acts. To define cognition would be limiting its application for its subject matter. The term 'cognition' now has so many referents that it is doubtful that any one will ever be able to unscramble all its various and sundry meanings. The definition given by Lachman (1979) appears to be more comprehensive as he has included higher mental processes in his definition. He *equates* cognition with higher level of mental functioning including memory, perception, learning, thinking, reasoning, and understanding.

> *In this paper the word 'cognition' is used with reference to understanding language concepts by the prelingual hearing impaired. Hearing impaired children are linguistically deprived as they learn language through reading and writing.*

In this paper 'cognition' is used with reference to understanding language concepts by prelingual hearing impaired.

Hearing impaired children are linguistically deprived as they learn language through reading and writing. They are unlike the hearing children in forming language concepts. The normal child learns language through natural linguistic feedbacks and forms association between language and understanding whereas hearing impaired and particularly the prelingual hearing impaired have difficulty in forming association between language and understanding. For example, the concept of speed. They have understanding in relation to the context given. The concept of speed in relation to running electrical fan or running of water tap or running river or of a scooter

or car, are formed differently among these children. They are unable to express this concept even through written language whereas a hearing child would be able to describe this concept in different situations more accurately The prelingual deaf concretize the concept and particularly those concepts which belong to higher mental processing. They have understanding but are unable to express it properly through the use of language codes.

Language occupies a key position in the realm of academic participation. A child who is linguistically deviant or disabled would certainly be suspected to be a case of low mental abilities, which is not always true. Through the language as medium, children express their academic attainments and are graded for their performance which includes fluency of language plus mastery of concept taught plus cognitive abilities to organize the concept and language. The teachers generally are unaware or ignorant about the problems imposed by mental retardation aphasia and prelingual deafness while he/she grades them in the inclusive system.

All children who appear to have understanding and are able to actively participate orally in the class are not necessarily able to express themselves through written language adequately due to the problems cited above. Therefore it would be futile to argue unnecessarily on the issue of cognition and language controversy without inclusion of such problems. Due to the advancement of neurological, psycho-logical, educational and technological fields, the issue of controversy over cognition and language has become more complicated and challenging.

Learning and so called under-standing of stereotype concepts in class teaching may be merely pseudo type of learning and understanding. For example, 'speed concept' in each above given situation may have different imagery, thinking, reasoning and learning patterns which might have not been included in the evaluation strategies planned by ordinary teachers. Some of the sensory and mentally handicapped lack linguistic expressive abilities and tend to get lower academic grades

A prelingual deaf child who has 90 dB or above hearing loss on audiometer testing in both the ears and has very insignificant and limited exposure to learning language would face a lot of difficulty in developing expressive language. These children learn language through visual and tactile media and rely more on visual channel for forming concepts. There are limitations of learning linguistic concepts through the visual channel. For example, concepts of laugh, amusement and happiness are very difficult to explain by these children. Though it has been observed, they know the difference but are unable to express because they have hardly got the opportunity to learn the difference through auditory inputs whereas normal children have lots of auditory feedbacks to learn these differences through usage.

The hearing impaired due to auditory

deprivation cannot acquire expressive language sufficiently like hearing children of their age group. Some studies given below would highlight this aspect.

Researchers' View on Language Development of the Prelingual Deaf

Conard (1979) studied 468 pre-lingual deaf children of 15 to 16 years and reported that the median reading age for the whole group was nine years. And 50 per cent of these children failed to exhibit any effective reading comprehension. They were nine years behind their hearing counterparts. Quigley et al. (1977) investigated 1150 prelingual deaf of 10-18 years of age for assessing their mastery over different syntactic structures used. He reported that even at 18 years of age none of the structures was successfully mastered by these deaf children as by their hearing counterparts. Even Furth (1966) is in agreement that the hearing impaired are significantly behind in language development and particularly in expressive language in comparison to hearing children of their age group

Kuhn (1974) has explored the relationship between sensorimotor development and meaningful expressive language of 16 disabled of four to eight years of age and observed that 50 per cent of these children showed no evidence of expressive language and the rest of them were listed linguistically subscaled.

Sharma (1989) conducted a study on 50 prelingual deaf exclusively and found that prelingual deaf children are behind by eight years in learning basic concepts and they faced difficulty in expressing their thought and understanding about abstract concepts.

Furth (1966) conducted experiments to test these hypotheses. Whether hearing and hearing impaired perform in the same way on three concepts, namely, similarity, symmetry and opposition were researched to explore the difference between hearing and hearing impaired. He visualized that on similarity/sameness and symmetry there would not be difference since the symbol for sameness can be used by both and for symmetry both the groups have no such symbol to be used, for understanding on 'opposition' he expected some difference. Results showed that the hypotheses hit the target right in the bull's eye where there were no significant differences in the attainments of concepts sameness and symmetry among hearing and hearing impaired whereas hearing children were superior in opposition concept These results provide strong evidence in favour of the conclusion that language is of importance in attaining mastery of concepts. Since Furth (1966) is not a symbolist he argues an opposition concept learning as manifested by hearing subjects must be a *pseudo concept*. The hearing subjects showed. superiority through familiarity in the language. Sharma (1989) investigated the relationship of prelingual deafness to linguistic competence of nine to ten

year-old deaf children and found that prelingual deaf children lag behind their hearing counterparts in attaining linguistic competence in spite of the same intelligence levels. The receptive language of the hearing impaired was observed to be more than the expressive language. They faced more difficulty in making compound verbs and sentences They were poorer in the usage of grammatical rules and formation of appropriate syntactical compositions. They were also observed to be lower in performing verbal tasks based on visual discrimination.

The few studies mentioned above make the point clear that the prelingual deaf children have poor linguistic skills. Now the point comes whether this retardation is due to the lower intellectual abilities or due to hearing impairment or due to the manifestation of environmental factors. Before attempting these questions it would be better if the issue of controversy regarding language and cognition were discussed in brief

Language and Cognition

The relationship between cognition and language would be analysed by going through the views of various researchers on this issue. The researchers have done intensive work on language of hearing and hearing impaired and reported the importance of language competence in language achievement and also in total achievement of child Some researchers believe that thinking and reasoning cannot be possible without language. Thinking without language is an illusion. Carner, 1949, Fisherman, 1960, Rosch, 1971 and some others say that cognition and language are identical (Max Mutter, 1887). Few others feel that thinking is a unique type of cognitive activity which may accompany and be expressed in language. Imagery may also occur in the absence of language (Fodor, 1976, Black, 1972).

Some others reported that language has no crucial role in cognitive activities. Language stands in a purely external relation to thinking. Words are symbols of performed abstract ideas in the mind of the individual Thinking can and does occur without language. The main roles of language are (1) to record one's own thoughts, and (ii) to communicate these thoughts to others (Lock, 1970). We think more than we say, that is, thinking overflows while symbols may always form part of our thinking; not all of our thinking is materialized in symbols. It is extremely rare for thinking to be constantly formulated in words, in a kind of well articulated speech. If we say that thinking is nothing but the operation without symbols then there would be lots of controversy because there is always more to thinking than the mere occurrence of symbols or creative production of symbols.

Thought is essentially relational and it makes little or no difference in what medium or quality of imagery, thinking goes on. Thus thinking is held to be a unique type of cognitive activity with a nature of its own Symbols are seen as

secondary products of the unique thinking process. Malcolm (1970) argues against this concept and says it is indeed an occult notion to conceive of thinking as a unique cognitive activity.

To the symbolists, thinking is reducible to language, which constitutes a mediating process assumed to bridge the interval between stimulus and response Language is originally social but develops not inner speech where it functions as an instrument of thought. In Vygotsky's view language and thought have different genetic roots and there is no clear and constant correlation between them He claims that "thought becomes verbal and speech rational and the internationalized linguistic structures are basic structures of thought". In the development of concepts, language seems to be a determining factor. Rommetveit (1968, 1972) has argued word meanings are dependent on a wider context i.e. there is no fixed meaning of a word apart from the context in which it is used. Even Paivio (1971) stated that verbal processes are objective and more amendable, the verbal processes are regarded as being less connected to the concreteness of the task situation and more functional as mediators in abstract tasks. Language provides speed to thinking. To him *language is given* the role of labelling the objects of an independently given and accessible world. Language *stands in a* constitutive *relation to experience and understanding.* Paivio has pressed the case for imagery too hard at the expense of language. We believe, thus, that language plays a much more prominent role in cognition than he is inclined to believe. Paivio bogs down in the over-simplified behaviourist mediational paradigm. Words and images are not elicited as associative reactions to external stimuli. According to Jean Piaget (1967) "operational structures are inherent in the syntax and semantics of natural language and the operational structures are not established merely by verbal transmission. These operational structures like classes and relations can be seen as early as on the sensori-motor level. These structures become internalized. The process of internalization may be favoured by language". His views strongly oppose the notion of learning operational structures through pre-packed verbal form. The verbal expressions that yield adequate information in relation to operational structures are according to him only assimilated where these structures have already been elaborated on the level of action or of operations as interiorized actions. He admits clearly that language plays no crucial role in thinking, what matters is operational intelligence. Language, in his view, is primarily a means of communication.

From the above statement it can be stated that cognition facilitates language learning. Even Lennberg (1975) goes to the extent that human beings have vast cognitive and linguistic potentials to learn and think with language. Slobin (1973) also emphasizes the importance of cognition in learning language as he

states that the cognitive abilities allow children to learn and to hold language information long enough to sort out the rules of language. It is argued by some that normal infants are so well programmed for language that there is no need to structure the environment to assist language learning. Language development in children can be viewed as being tied to normal cognitive development. As the child's cognitive abilities grow, his language abilities grow because he thinks in a more sophisticated way to express his ideas. What a child says is related to what he knows — this interdependency between cognition and language makes us raise the following questions about the prelingual deaf.

1. Do the prelingual deaf children possess any natural language? And if so, what does their language contribute to their intellectual development?

2. What kind of effect does hearing impairment have on the cognition of prelingual deaf children.

Here we shall concentrate on these questions which seems to be the most important for understanding the relationship between cognition and language.

The present study undertaken attempts to answer the latter question which we shall discuss below. And the answer to the former question is that these children are in possession of natural language that is, sign language, has been reported to be interfering in learning language through reading and writing but it facilitates development of cognitive concepts.

Present Study

Fifty prelingual and 50 hearing children were selected from the inclusive system of Delhi and Haryana. This selection was done on the random basis. The factors like hearing loss, intelligence, age, sex, medium and syllabus offered in the schools were matched while making selection of the sample.

The selected sample was given the following tests.

1. Raven Progressive matrices (coloured) for prediction of non-verbal intelligence of these groups.

2. Audiometer Testing Graphs: The audiograms were taken into consideration for controlling the hearing loss.

3. Parent questionnaire was used to obtain medical and language history of these children to verify the information received from teachers and peers.

4. Language Competence Test constructed by the investigator was used to assess linguistic competence of hearing and hearing impaired children.

Methodology

The non-verbal intelligence test was administered on hearing and hearing impaired from the selected schools. And

Cognition and Expression in the Context of the Prelingual Deaf

five Hindi language test marks of each child were collected from school records. The average of five test marks constituted the index of their language achievement and the scores obtained on language competence test constructed for this purpose give the language ability score of each selected hearing and hearing impaired.

The age, sex, hearing loss and intelligence factors were controlled to know the impact of prelingual deafness on language competence and achievement.

Results

The results received on these variables, namely, intelligence, language competence test reveal that the prelingual deaf children in general have less linguistic competence than the hearing children but on intelligence hearing impaired were higher than hearing children of their age group. This indicates that hearing impaired are intelligent but are poor on linguistic competence Linguistic aptitude is part of global intelligence then how are these prelingual deaf children found to be linguistically retarded in comparison to hearing children? Are they linguistically retarded due to hearing impairment or due to environmental factors? To find answers to all these questions is not an easy task but certainly on the basis of work done in this area by various researchers in India and abroad it can be stated that they are linguistically retarded because they are unable to

express themselves in the language codes accepted by their communities. Their natural language, though, has vocabulary and syntax but does not give enough opportunity for assimilating printed medium in the beginning of their education. Even use of sign language is reported to be interfering with learning language through reading and writing (Sharma, 1983) The hearing population is handicapped in interacting with these prelingual deaf and those who are able to interact have observed that their receptive language is better than their expressive language (Sharma, 1989). They understand the linguistic concepts as much as the hearing children but are unable to express themselves to the following reasons.

1. Lack of early identification of hearing loss and making use of residual hearing for auditory sensitization.

2. Lack of systematic early language stimulation programmes.

3. Early language stimulators are neither properly trained nor have proper linguistic material to support early language interventional programme.

4. Encouragement of the illiterate parents to use home-made signs which are different from the standard sign language of the deaf.

5. Interference of sign language in learning, reading and writing of school language.

6. The use of sign language by all teachers teaching in the exclusive system of education.

7. Segregation of deaf children from hearing environments.

8 Poor quality of hearing aids.

These are some of the main factors which do not allow the prelingual deaf to develop proper expressive language. That is the reason why these children, in spite of *equal cognitive* level, *remain without* proper *linguistic expression.*

To conclude, it can be stated that the innate linguistic ability of these children is not being utilized due to environment reasons. The problem of linguistic retardation of the prelingual deaf in spite of their higher intelligence levels would continue till the linguists and educationists join together to plan strategies for developing language adequately in these children.

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Towards Achieving the Target of Education for All

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- To achieve the target of Education for All, it is imperative that integrated education for special needs children be initiated. We cannot achieve this target unless we enroll the major chunk of children with disabilities into the general education system.

- The National Policy on Education (1986) recommended Integrated Education in general schools for children with locomotor hadicaps and with other mild disabilities.

- The POA (1992) suggested that a child with disability who can be educated in a general school be educated in a general school and *not* in a special school.

- Even those children who are initially admitted to special schools for getting training in plus curriculum should be transferred to general schools once they acquire daily living skills, communication and basic academic skills.

- The target will be to integrate the children with special needs in the general community at all levels as equal partners to prepare them for normal growth and to enable them to face life with courage and confidence.

> *These pages summarize how to implement integrated education effectively in order to achieve the target of education for all.*

Objectives

The following objectives can be highlighted for the achievement of integrated education.

1. To enroll the special needs children in the general education system as far as possible.

2. To facilitate their retention in general schools, we need to create conditions

so that these children are retained in the schools.

3. To bring them at par with other children in school achievement.

Effective Implementation of Integrated Education

We can implement the concept of integrated education by following these steps.

(i) *Creating Awareness and Developing Sensitization among Educational Administrators*

To achieve this orientation/sensitization programmes of educational administrators/head teachers scan be organized for one day. These are important programmes because here the educational administrators are oriented towards the education of special needs children. Unless they understand the importance of the education for these children, teachers cannot work with them. It is the educational administra-tors or heads of instititutions who will allow entrance of these children in the schools. Therefore, sensitization of educational administrators is a must.

(ii) *Level-I Training*

It involves training of all general teachers to identify disabled children in school and out of school. It can be arranged for three to five days. All general teachers need to be trained to educate children with disabilities.

It includes creating awareness among general teachers about disabled children existing in the general education system, awareness about different types of children with disabilities and their special needs arising out of their disabilities. The teacher has to address their needs in the general classrooms while teaching other non-disabled children.

(iii) *Level-II Training*

It can be an in-depth training of teachers on how to address their needs, what curriculum adjustments and adaptations, teaching-learning materials, aids and equipments, etc. are required by these children while addressing their needs in general classrooms. Where are these material available? Where should the child be referred for further assistance and guidance?

(iv) *Level-III Training*

Preparation of Teachers as Special Teachers/Resource Teachers: This can be a further in-depth training for teachers for atleast one or two years on how to meet their individual needs to that they can learn to the maximum of their capabilities. These are the teachers who will make not only the entire educational planning for these children but also decide and plan for their future as well-adjusted adults. They can help these children to utilise their capabilities to the maximum.

Simultaneously, assessment of children by a multi-disciplinary team on the one hand is a must while we are busy in capacity building on the other.

We can use the functional Assessment Guide (prepared by NCERT for the assessment of children with disabilities) for making the functional assessment of the children till a multi-disciplinary team is formed/available. The multi-disciplinary team is not available, particularly in the rural areas. Under these circumstances, we need to prepare or train the general teachers in the use of the Functional Assessment Guide. Assessment becomes an important component of the whole integrated education process because the entire educational plan for the child will depend upon the assessment report. Therefore, it needs to be very authentic and correct. It needs to be conducted in a very systematic way by trained teachers or a special educator or a resource teacher.

After the functional assessment is conducted the teacher can develop individualized educational plans for the child. Long-term and short-term goals can be fixed for the child and the progress of the child can be watched. The functional assessment can be used as a stop-gap arrangement for the child till a multi-disciplinary team is identified and located. This is an assessment which is conducted by a team of professionals involving medical doctors for the assessment of the specific disability of the child, e.g. involvement of an ENT surgeon, an eye specialist, an orthopaedic surgeon, an audiologist, a speech therapist, occupational therapist, physiotherapist, a psychologist and a special educator. The involvement of

parents and siblings also sometimes becomes important to provide information about the child and keep track of the progress of the child. All the members of the team discuss the separate assessment of the child and finally give one report stating what the child can do. What is his functional level of performance? What are his strengths and weaknesses? The special educator then starts from the child's functional level and strengths and draws individualized education plan for the child.

There are certain interventions that are needed to mainstream these children in the general education system. These are:

● Curriculum adjustments and adaptations in different disabilities across different subject areas.
● Curriculum transaction
● Classroom organization
● Material development
● Preparation of teachers to meet the special needs of children.
● Providing aids and equipments suiting their needs
● Establishing linkages
● Evaluation in terms of adaptations in evaluation procedures and concession and relaxations.

All these are important interventions which need further consideration for implementation of integrated education as part of the general education system.

There are same facilities provided by the Government of India for the benefit of children with disabilities under the IEDC scheme.

Implications of Piagetian Theory of Cognitive Development for Young Children with Special Needs

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A TYPICAL profile of a child with special needs is afforded by Siddharth, a child with pronounced learning disabilities. It was a case which stood in patent need of constructive intervention suggested by a careful analysis of the situation. The child was seen to be deficient in the basic skills of communication and social interaction. He was just four years old at the time and the school, through a discussion with his mother, was able to piece together his background. His language acquisition had been retarded and his problems compounded by persistent bouts of ill-health. His grasp of spoken language allowed him to just understand what was spoken to him, without permitting him to express his wants. His inadequacy possibly fuelled his restlessness and made him quite unmanageable. His mother was evidently relieved at his being accepted in a special preschool programme after he had been rejected by some others and was hoping for further understanding and support from his school.

Identification of pre-school children with learning disabilities and provision of correct remedial measures for

> Young children with special needs often do not get these needs addressed or, worse, may be traumatized by conventional educational processes and so need attention in the form of constructive intervention. The main thrust of the paper is concerned with developing the implications of Piaget's theory for special-needs children in the pre-operation stage which corresponds to the period between two to six or seven years in the case of a normal child.

them are the strengths of contemporary educational procedures (Lerner, 1988; Shearer & Moni, 1987). If carried out early enough, such intervention might deliver children from the trauma of failure in a more conventional academic programme. It has been found that such remedial measures are specially effective when they target two specific groups: (i) the infants and toddlers, and (ii) the preschoolers in the two-to-six age group. By a remarkable coincidence, Piaget has erected a extensive theory which seeks to explain the development of a cognitive apparatus in these two age groups of children among others. This allows us to appropriate his exhaustively adumbrated theory to the present context and work out its implications, especially for the latter group, in this paper.

Children in the age group between two to five or six, are said to be in the pre-operational stage. This stage is marked by an accelerated development in the ability to use symbols to represent spatial and temporal configurations and physical dispositions of objects. Concurrently language develops to the extent where it permits a facility with the employment of images. This faculty has received extensive attention, especially by Piaget and Inhelder (1971). They have, in fact, further explored the connections between the use of imagery by children and their thought processes. They have come to the conclusion that as a child's power to visualize a situation not explicitly present increases, so too does the capacity to use imagery.

The pre-operational period is also one in which a child develops the power to recognize certain physical structural relationships in its visual field. While he/she is still not in a position to distil out of his/her experience the geometric notion of shape, there is a rudimentary topological sense of spatial organization. In particular, there is a dawning knowledge of the role that space plays in separating objects, thereby permitting the perception of distinct things. But lacking the more sophisticated clue of shape, the child may not be in a position to distinguish the letters of the alphabet from each other.

As the pre-operation stage advances, it is accompanied by a capacity on the part of the child to perceive finer gradations of tone, colour and character between objects and a heightened ability, on the basis of such distinctions, to register ever finer discriminations. In a parallel direction, an appreciation of the linear nature of temporality occurs with a growing ability to order events in a temporal sequence. In the final stage the child learns to process spatial-temporal amalgams like speed.

As more and more of the world begins to impinge on the consciousness of the child in the pre-operation stage it learns to process this information in ways which are significantly —sometimes startlingly different —from an adult's. There is an instinctive tendency towards personifying the objects of the exterior world and attempting to interpret its manifold relations to the self

in terms of human social interconnections. Thus, for instance, a child walking down a road and observing the moon, would conclude from the apparent fixity of its position, that it was following him. He would stop short of being confronted by the immediate paradox that the moon would, in this view, also be following another person walking in the opposite direction. Again, the tendency assets itself in this stage of childhood, to invest external nature with personal and human lineaments. For example, a natural law like the one which ordains that a piece of wood would float in water, while another of iron would sink, would be sought to be understood in terms of the operation of a volition.

In consideration of the above facts, Piaget propounded the theory that during the pre-operational stage, a child tends to organize its impressions of the world in terms of its personal viewpoint. In support of this hypothesis, Piaget described an experiment in which a child is shown a disposition of objects and asked to describe how it would look to a person sitting on the opposite side of the table. Invariably, the child would betray an incapacity to imagine such a shift in perspective, indicating that such a level of abstraction as the exercise demanded was well beyond his/her grasp.

In general, the pre-operational stage in the child appears to be characterized by an inability to make rational judgements about the world. In fact, rationality in Piaget's scheme of things is understood in terms of a capacity to alter one state into another — where such a shuffling of states is brought about by a purely logical mechanism. Such an alteration within the Piagetian framework, is also required to be reversible To give an example, consider the act of synthesis involved in adding four to five to get nine. This procedure can be inverted or "reversed" to analyze nine into the two constituent numbers five and four. Thus, to support his contention that a child has no "rational" appreciation of addition, Piaget would offer the argument that a child who could add five and four to get nine, might still be unable to sole the inverted problem nine–four = ?

As is evident from the above discussion, we have confined our attention to that part of the Piagetian theory pertaining to early intellectual development. One further significant observation becomes necessary regarding the foregoing discussion. While the speed with which a child would transit through the various stages described above could vary, the sequence of the stages itself is invariant (Frost & Kissinger, 1976). An important corollary that needs to be emphasized is that a child whose intellectual development is retarded, evidences this tardiness only in the rate at which it ascends through the above conceptual hierarchy, and not on the order of these stages. Thus, an understanding of this principle should be the key to any structural modification of a curriculum aimed at as a remedial measure for children with special needs. But it has

to be remembered that Piagetian theory is largely silent on the specifics of application of this theory in the classroom. This task has been addressed by later researchers who have distilled out of its a programme for early education. Especially, the cognitive psychology of Piaget (1970, 1952) has been identified as an important perspective from which to fabricate a model for the development of a child's cognitive or thinking abilities.

This could include such diverse cerebral activities as memory, discrimination, problem solving, verbal learning and comprehension. For example, the cognitive emphasis curriculum is concerned with framing a system which promotes thinking skills. Such a system is an academic imperative in view of the fact that cognitive development is an activity that is largely strengthened through exercise. Another aspect is the environment whose stimuli must be so graded as to allow a transit through an escalated system of increasingly challenging conceptual structures. Among the other factors contributing a positive influence, Piaget mentions play. But this last should be one that is enriched through a conscious encouragement of features like questioning, hypothesizing and wondering. Such curricula should therefore incorporate these features.

On a different plane, activities which tend to develop motor skills also contribute to the development of a child. Routine day-to-day chores like dressing, eating and attending to personal hygiene have, therefore, a part to play a educational training. Communication skills form another vital feature of the personality profile — especially the power and control over social transactions which a mastery over language affords. In the pre-reading stage, the two most important sluice gates through which sense information pours in, are the eye and the ear — consequently the necessity of activities that exercise the audio and the visual channels. Among the purely cerebral activities, cogitation, comparison, classification, etc. could be stimulated through games. Finally, social skills —especially those of social interaction — could be imparted through the mechanism of personal relationships with other children and with adults.

These considerations suggest the following experiments.

1. A set of tasks can be informally administered to children of mixed age groups. Records could be made of their speech and actions and these could be used in subsequent analysis.

2. Piaget's theory of cognitive development could be tested out over a wide range of children's behaviour — language, drawing, mathematical ability, perception of time, capacity for moral judgements and even the ability to fantasize.

3. Tape-recordings and written observational records will facilitate an analysis of behavioural patterns, which in turn would permit an understanding of children's

emotional and intellectual development.

An extremely innovative variation on this theme would be to provide special-needs children at the preschool level with micro-computers. A whole range of pre-academic skills, from the visual and the cognitive to motor control (the latter through video games), could be placed literally at their fingertips. Spatial distinctions such as larger and smaller and those derived from positional variations like 'above' and 'below' can be conveyed through suitable computer graphics techniques, while the interactive technologies of the latest electronic gadgetries encourage a child to communicate with a computer. The amplitude of possibilities suggested by advances in electronic technology have not even begun to be understood.

Siddharth is delighted now when he finds that the software programme in the computer allows him to control his environment by permitting his to make and implement him to make and implement decisions and letting him practise some newly acquired computer words. During lunch one day, he displays his generalized micro-computer learning. Holding up his diagonally cut half of the jam-butter sandwich he is eating, he intones triumphantly, "Triangle".

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Emerging Teacher in a School for the Blind

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THE teacher occupies an important place in the process of education and a great responsibility, therefore, evolves upon the teacher. According to Binning, "Teaching is a progressive occupation and the teacher must ever be a student " Dr Radhakrishnan has rightly remarked, "The teacher's place in society is of vital importance. He (or she) acts as 'the pivot for the transmission of intellectual traditions and technical skill from generation to generation and helps to keep the lamp of civilization burning."

The Kothari Commission 1964-66 stated that,"Of all the different factors which influence the quality of education and its contribution to national devel-

> *Every society expects its educational institutions to help in developing competent citizens who would at the same time maintain the existing values and adopt fresh ones. Every school subject must, either through the matter taught or through the way of learning it, contribute to the growth of knowledge and the competence of the learner.*

opment, the quality, competence and character of teachers are undoubtedly the most significant. Nothing is more important than securing a sufficient supply of higher quality recruits to the teaching profession, providing them with the best possible preparation and creating satisfactory conditions of work in which they can be fully effective. The efficiency of the teaching profession and its contribution to national development in general and educational, in particular, will depend largely on its social status and morale.

This will, in turn, depend upon two interrelated factors: economic status and civic rights of teachers, and their

professional competence, character and sense of dedication. So there is no doubt that the teacher is the very important factor on whom the progress of the nation depends.

The teacher has an important place in the whole education system because children are heavily influenced by people with whom they are in close personal contact. Teachers are like pillars that strengthen the educational structure and have many functions to perform within the classroom and school atmosphere. A teacher of the visually impaired should use the knowledge of the personality of these children in the teaching-learning process.

The teacher is in a position to facilitate the enrichment of the positive personality traits/habits and alleviate the effect of the negative ones through aids for discipline, communication, motivation and classroom organization in the following manner.

1. Visually impaired children respond favourably to kindness and sympathy in the teaching-learning atmosphere. The child may be motivated to behave with discipline through such methods as rewards, grading, praise and encouragement by the teacher. These would also assist in the development of their emotional construction and good empathetic relationships.

2. Teaching in a friendly manner with due consideration for the problems of the students and appropriate new methods of teaching (through projects, comprehension, real-situation practicals, etc.) which would promote their imagination, creativity, curiosity, interests, intellectual level and reduce negative attitudes such as aggression, tough-mindedness, anxiety, tension and dependency. A conducive and encouraging teaching-learning atmosphere would help in making the students realistic and sensible, thus ameliorating their tendency to develop paranoid characteristics.

3. Reinforcing positive traits in the visually impaired as well as non-impaired children by teaching them to communicate better through oral method, audio-tape and embossed material and braille content, etc Teachers should specially choose to teach interesting topics in order to develop the child emotionally and to involve them intellectually and help them to think imaginatively. They should be urged to perform manual, creative and vocational task to make them explorative, creative and to put them in situations where they are needed to interact amongst themselves.

4. Inclusion of co-curricular activities like drama, music, playing musical instruments, and sports as part of their subject. Mutual and inter-school competitions can be instituted and the children can be involved and motivated by announcement of their contribution in the assembly.

5. Giving them an understanding of their own problem, helping them to

develop a realistic perspective of themselves and the world around without either embarrassing or scaring them. Aids like auditory instructions, audio tape, TV, embossed globes, talking books, maps, pictures, clay model, discussion, etc. should be used in every school for the visually impaired to help them to cope with the realities of the world with independent ideas.

Teachers should undergo inservice training demonstrations and attend social welfare institutions to get trained as resource teachers who strive to remote the negative personality traits and promote positive personality traits along with creativity, craft, vocational efficiency in the visually impaired with a keen understanding of their problems, capacities, feelings and qualities. They can use the best available audio aids and new methods of teaching instead of sticking to traditional methods. These resource teachers can train their students to face life boldly in a society dominated by sighted individuals.

Educational organizations such as University Grants Commission (UGC), NCERT and National Institute of Educational Planning and Administration (NIEPA) and educational planners should arrange orientation programmes to enrich the teachers with new innovative programmes, new curricula with pictorial illustrations, maps and practical exercises and comprehension questions with a workbook supplementing the textbook in each subject. This would facilitate a better understanding of the subject and help in the development of positive personality factors. Since the visually impaired children abstain from practical involvement, the teachers can incorporate new metholdoogies suited to their personalities with the use of oral practice, practical experimentation and audio films, audio tapes of lessons, etc. to make education productive and self supportive. The visually impaired students might be provided a large variety of options such as vocational training, craft, carpentry, candle-making, canning, music, tailoring, weaving, etc. and other such vocations that involve little visual interaction.

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Sharavan Vikar Yukt Bachhon Ka Bhasha Vikas

YOUNG children with impaired hearing need to be helped out at an early age for acqusition of proper language abilities. Inability to hear environmental sounds and human interactions in infancy retard power of acquiring age appropriate language in children. This little book in Hindi helps parents, teachers and professionals in understanding the need for early identification of hearing impairment and provides guidnace for early educational interventions.

The book is presented in three sections. The first section deals with the process of language acquisition of hearing impaired on the basis of degree of hearing loss, age of onset of impairment, endogenous and exogenous factors related to the impairment, etc., and need for early identification of impairment. Some important informal tests have been suggested to identify hearing impairment at home.

The second section discusses ways of language teaching to these children according to the severity of the handicap. While teaching language to these children in the inclusive system of education, the minimum levels of language competencies to be acquired by these children mustbe kept in mind. The MLLs have been identified and adapted for these children. Different chapters in this section deal with methods of teaching language to mildly and moderately impaired children, and to severely and profoundtly impaired children. Various activities have been suggested to acquire language by these children. In order to develop basic language skills, some special activities with illustrations have been suggested for teachers. For development of grammatically correct language, guidelines have been provided for teahcers. A pre-school curriculum has also been developed for vocabulary development and concept formation.

The third and last section deals with adaptations and adjustments in teaching and evaluation procedures for children with impaired hearing. Teaching methodologies have been discussed and adaptations in curriculum and methods have been suggested by giving examples from NCERT Hindi textbooks for Classes I and II. One teaching unit has been identified and duly illustrated in the book to make it clear how to develop concepts. The process of evaluating different aspects of languages have been

discussed in the last chapter. Methods of evaluating receptive and expressive language skills and provision of diagnostic and remedial instuction have also been discussed.

In all the twelve chapters the author has exhaustively made an effort to help professionals in·the field to facilitate language acquisition process in young children with different levels of hearing loss. The books will prove an asset for professionals, teachers and parents.

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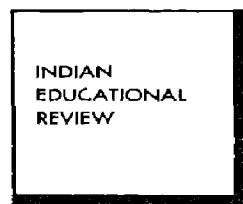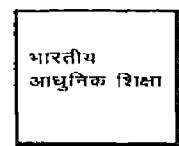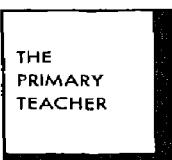
THE
PRIMARY
TEACHER

भारतीय
आधुनिक शिक्षा

JOURNAL
OF
INDIAN
EDUCATION

SCHOOL
SCIENCE

INDIAN
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प्राइमरी
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The Primary
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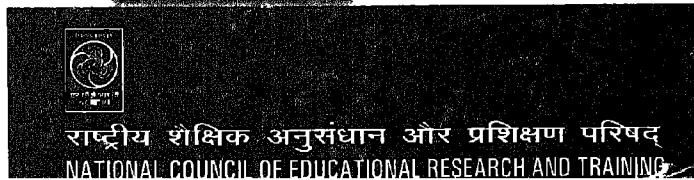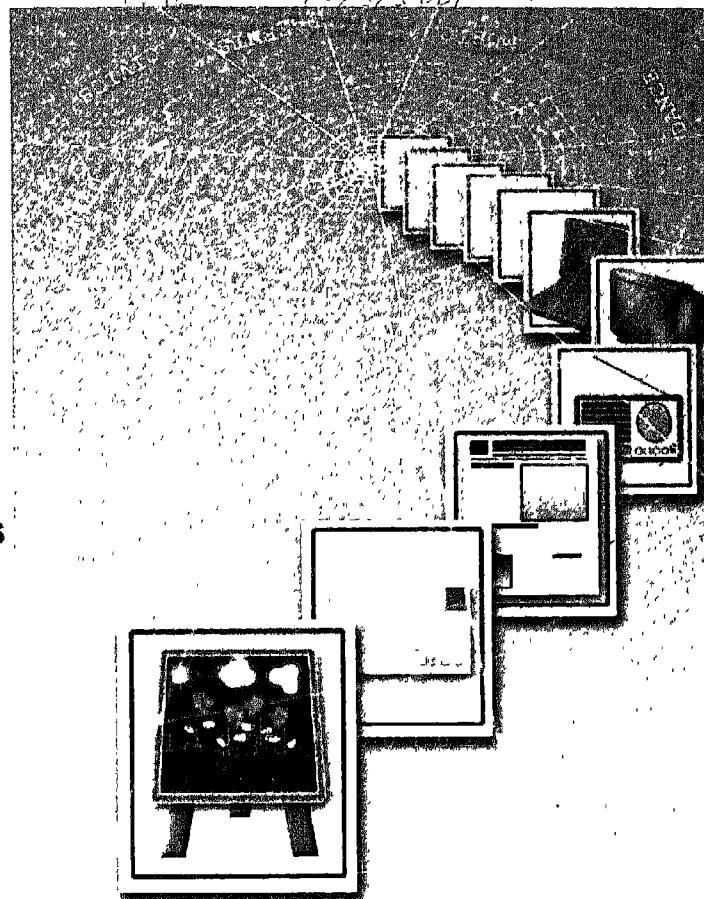
The Primary Teacher is a quarterly brought out by the National Council of Educational Research and Training (NCERT), New Delhi The journal intends to give practising teachers and concerned administrators authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc. offered at various centres in India, from time to time It also provides a forum for discussion of contemporary issues in the field of education. The major features of *The Primary Teacher* are:

- Educational policies concerning primary education
- Questions and answers
- States round-up
- Illustrated material for classroom use.

Subscription: A copy of the journal costs Rs 5.00. Annual subscription is Rs 20 00.

Contribution: Articles and papers written by school teachers either in English or in Hindi are welcome. Each published article would be paid for. Two typed copies of the articles should be sent for consideration. Please send your subscriptions to the Head, Publication Division, NCERT, NIE Campus, Sri Aurobindo Marg, New Delhi 110 016. The opinions expressed in *The Primary Teacher* are those of the authors. This journal merely provides a forum to authors to express themselves, particularly those who have a primary education background.

CONTENTS

Editorial

CHANGE is the law of nature and it is the prerequisite for any kind of progress in society. The recurring technological innovations and explosion of knowledge in our day-to-day life has given birth to a new kind of society. As change in one structure of society leads to changes in other structures of society, these changes have introduced new concepts and innovations in the teaching-learning system and made a profound impact on education. They have enhanced intellectual excellence and made learning easier and faster. The exciting packages like CD Roms, multimedia packages and web-based tools are being provided by computer-based learning.

It is interesting to note how, in the history of education, motion pictures, radios, new technologies and new packages like CD Roms, multimedia and websites have now become the best tools. Our lead article thus looks at the changes educational institutions are making in India.

We have moved ahead from chart papers, coloured pens, pencils, blackboards to net, mouse, and power points

Computers have arrived in schools. People from various disciplines—educators, psychologists, social scientists, teachers in computer science, coaching centres — have joined hands to promote this technology. The scheme for Class-2000 has been formulated in the first stage. This would make 10,000 students computer literate and computer literacy is the need of the hour The programmes for Kendriya Vidyalayas and Navodaya Vidyalayas have been envisaged. About 1000 schools would be given computer aid and about 1000 Smart Schools would be established. Students and teachers alike are enthusiastic about computers. The schools have to gear up for this new technology.

The new changes have thrown a new challenge before teachers demanding change in their attitude and methods, and establishing collaboration with experts from various disciplines, taking benefit of their expertise. They should be ready to join hands for promotion of any technological innovations and new kind of knowledge. But at the same time, it should be remembered that the fruits of science and technology should go to everyone irrespective of caste, class or region and it should not be the privilege of a few. In reaching everyone lies our resounding victory.

USHA DUTTA
Academic Editor

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The Teacher in a Web – 1

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The "I am all Alone" Feeling

How many times have you encountered blank, uncomprehending faces staring at you during your lessons and felt, "If only I could show them the video programme I saw the other day"?

How many times have you found yourself amidst children struggling to understand a concept and thought, "Isn't there a simpler way to explain it?" or "Can I organize some activities which will help them understand better?"

> *Beginning with this, we present a series of articles which intends to explore technology and its applications in education. The premise is that if judiciously used, modern technology can be useful in the classroom. Use of technology in education has been limited because where hardware led, software seldom reached, reducing the gadgets to show-pieces. We intend to present the various avatars of educational technology, beginning with the most reliable, the blackboard, to the more recent ones like the internet, and examine how these can be useful to the teacher in the classroom. We also intend to show that technology is something that not only the science teacher, but also the geography teacher, or the civics teacher or the language teacher can benefit from.*

How many times have you found yourself wondering, "If only someone could explain these concepts to me!" and waited for the next monthly meeting of teachers or the subject inspector and got no clarification?

How many times have you got extremely enthused about activity based teaching at the training programme, made up your mind to practise it in your class, and found yourself at your wit's end because you needed some more support?

You are not ALONE.

India is a huge country with a very large number of schools of all kinds. But thanks to the sheer size of the country, schools are far apart and it is but understandable that a teacher finds herself/himself all alone, left to fend for herself/himself, with limited resources and almost no one to share the burden with.

The educational administration on its part has attempted organizing training programmes, supplying kits, preparing resource books, etc. But more often than not, this kind of support is far between. If you get called for some training programme today, it might be
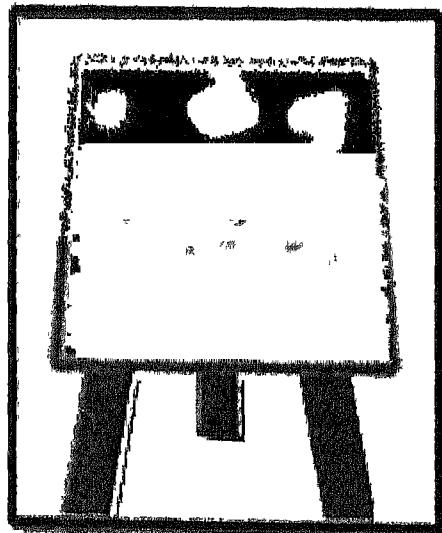
years before you get your next chance. Hence there would be no continuity in support. Resources, even if available are usually never available at the right time in the right form.

Many of us have tried to overcome this problem in many different ways. We have made our own collections of newspaper and magazine cuttings. We have collected activities, books, teaching aids. We even have a number of potential resource persons listed in our address book. But still the fear of not having the right resource at the right time lurks in the background.

Again, you are not ALONE.

We have referred to your not being alone in two different senses. One that you are one among the thousands of teachers who are feeling thus. Hence neither are your problems unique in any way, nor is there a simple solution to it. Two, we are trying to make an argument that solutions to some of the resource and training problems you face are available near at hand.

This is the first in a series of articles on educational technology. We intend to explore with you the various forms of technology that have been put to use in education. We will also examine to what extent these can be put to use in our classrooms. In particular, we have two specific uses for technology —overcoming the scarcity of resources for the teacher and fostering networking and sharing amongst teachers.

The Technology Dream

Imagine yourself with say, a cell phone like device. let us call it the Dream Machine, *Dream* for short. You use the *Dream* to connect to some library, copy material into *Dream* (we call it download), plug *Dream* into a display

(say a large television screen) and push a few buttons. Your class now sees video or listens to audio from across the world. Your class has the latest information about anything happening anywhere in the world. Be it the weather report, or a natural disaster, be it the parliament in session or the latest position in a world cup football match, be it about some tribe in the Amazon jungles or fishes in the Pacific Ocean. The information could be text, audio, video, graphics, and animation. All this with the push of a few buttons.

Imagine a group of teachers, interested in say, mathematics. They decide to hold weekly meetings on some area of the curriculum to help each other understand the subject better. They also have some experts, if need be, to help them out. They pull out their *Dream*, push a few buttons and lo and behold, they are connected, their meeting is on. Never mind the fact, that this group of teachers is not sitting in the same place. In fact, they could be anywhere in the world.

Imagine a new child has joined your class. And soon enough you realize that the child has some hearing related problem. Not only do you want to ensure that the child does not miss out on anything, but also want to help the child's parents get medical assistance. You have never been trained to handle such a child. Who can help you out? Who provides medical help to such children? Push a few buttons on *Dream* and you have a list of organizations which can help. You also find resource persons in your neighbourhood who know more about handling such children.

Imagine . wait a second, you think we are trying to pull your leg. You think we are talking of some science fiction movie script. No, bear with us and we intend to show that this is not only possible today, but is actually happening elsewhere in the world. *Dream* is being put to many more uses. But before jumping to it, let us explore some of the more conventional educational technologies.

The Postman to the Aid of Education

Have you ever wondered whether the simple, cheap, ever available postcard could become a powerful technological aid? Before we examine how we can use it, let us examine its facets. The postcard and its cousins, the inland letter or the envelope are a one-way means of communication. A reply can only be solicited and would depend on the initiative of the addressee. It further depends on an elaborate and, for most purposes, reliable mechanism of delivery. This media can handle text, diagrams, maps and even pictures.

The simplest way one could think of using this to support the educational process would be to write to someone asking for information, academic help or resources. This presupposes the availability of the resource person and his/her willingness to support such needs Even so, it is a one-to-one support mechanism.

Consider that some of us teachers get together with a few resource persons and agree to support one another. Then the postcard method becomes more reliable. We could extend this to a network of teachers and resource
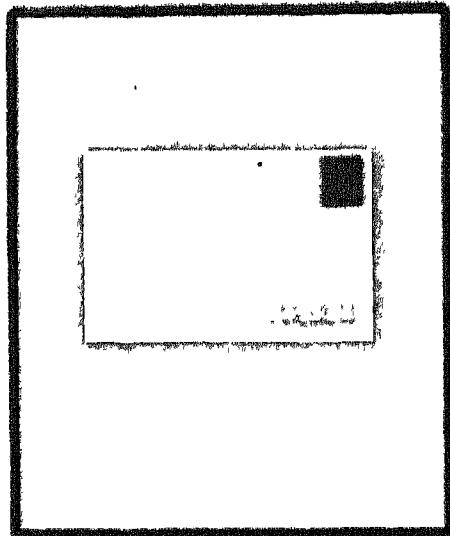
persons, who periodically send out information and resource material to each other. Notice that the group is not limited by any physical boundary. They could be anywhere on earth. The circulation of the collected resources would benefit the larger community of teachers. The idea of a newsletter is born. Many government and non-government organization (NGOs) support such an idea. They periodically bring out their newsletters and journals. You could subscribe to them.

Extend this idea to two such groups working, say, in different countries. Situations could be varied and hence sharing of information between these

groups could lead to a much better understanding of the educational process. You will notice that what we have proposed is a simple extension of the pen pal idea. For instance, some years ago, children of Demonstration School, Regional Institute of Education, Mysore had such an arrangement with a school in the U.K. There was a lot of sharing of cultural information between these groups of primary school children.

The purposes for which such a post based network can be used are many and sharing of information, resources and solutions to problems are just a few. Only your imagination can limit it.

Here is the News

The newspaper that most of us have got addicted to is the next technological medium we will consider. By the newspaper we mean not only the dailies, but also the weeklies, fortnightlies, monthlies, etc. The print medium is by far, the most developed of the communication technologies in terms of its reach, its participatory nature and the fact that it is available in one form or the other in every single language with a script.

When Gutenberg invented the first printing machine, it brought about the first information revolution. Prior to this invention, the Bible had to be copied by hand and only those people who could afford to sit for months and pains-takingly copy it could hope to possess a copy of the holy Bible. Note that the common man could not forego his wage earning for such a task. This automatically meant that the scriptures were

beyond the reach of everyone excepting probably the rich and mighty. With the invention of the printing press, copies could be made easily and at an affordable price, the consequence of which you can well imagine. Many more people read the Bible, making the printing press one of the initiators of the Renaissance movement.

What can this medium offer? Every newspaper in performing its social function, takes on not only the role of a common information transmitter (the
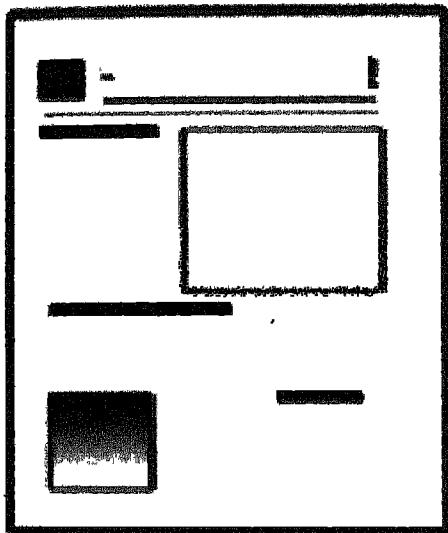
following event occurred on such and such day at such and such place ..) to a proactive social activist. In this latter role, the newspaper informs its readers of occurrences, analyzes its motivations and implications and initiates a forun for discussion. Many newspapers carry supplements or special editions, which are not only informative and well supported by picutres, but in many cases

directly relevant to what we are doing in the classroom.

Making one's own collection of relevant articles, news clippings and pictures would be the easiest way of using the resources provided by a newspaper of magazine. Can we go one step further? With a little initiative, local newspapers can be encouraged to get involved in the educational process. If not anything, they can time their special supplements to carry topics of relevance so that we and our students have the information at the right time. Writeups, activity sheets, discussions on educational issues can find place in the newspapers. it is our experience that many newspapers are willing. The only problem they face is that of continuous availability of such material. For once begun, stopping any feature could negatively impact the reputation of a newspaper. Teacher groups could undertake this initiative and help the newspaper support education.

Enter the Electronic Media

Every communication technology has been explored for its potential benefits to the educational process including the radio and television which are among the two most popular media. Over the years many imaginative programmes in education have been aired, be it information, training or curriculum transaction. The radio and television are basically one-way media. The receiver can only listen or watch it passively. But it has the greatest advantage of a broadcast capability. Unlike the

Newspaper in Education (NIE) is an educational partnership between the newspaper industry and participating school systems. The NIE programme was first introduced in the 1930s. Today, some thirty countries have adopted NIE and their programmes and activities cater to preschool through college and beyond. Schools may use newspapers at all grade levels to teach a variety of subjects — history, reading, social science, maths, economics, composition, journalism and government, to name a few. At this basic level, an NIE programme may involve nothing more than the weekday delivery of newspapers to a school. The next step could be to deliver together with the newspapers a description of an exercise that can be done using the newspaper. This allows the teacher to control the use of newspapers and the students to have a guideline. At the most active level, an NIE programme engages several newspaper staff members; a well-defined package of products and services, including extensive teacher training; and activities all year long. A well-developed programme often includes literacy efforts and other programmes that earn a reputation for the newspaper as an active and well-respected player in the community's educational process.

Benefits of NIE

The partnership of newspapers and schools benefits both parties, not to mention the community itself, and is more than simply a *pro bono* effort by newspapers or a commercialization of the education process.

Benefits to Schools

- Increases students' reading abilities.
- Sharpens students' thinking skills.

- Increases students' interest and motivation by providing study materials relevant to their lives.
- Prepares students for active citizenship in their democracy.
- Teachers and students function at the same level.
- Heightens teachers' interest in news teaching techniques.
- Involves schools in the lives of the communities they serve.
- Improves relations with students' families.
- Responds to the needs of local businesses as further employers.

Benefits for the Newspaper

- Encourages long-term readership. Studies have shown that the most avid newspaper readers began reading the newspaper and using it as a resource early in life.
- Improves public and community relations.
- Increases circulation. Schools may order thousands of copies per week or month.
- Increases advertising revenue through special sections and a guaranteed audience through NIE.

Benefits to the Community

- Enhances the quality of citizen participation in schools and local government through better mututal understanding among journalists, educators, students and parents.
- Transforms students into interested, active citizens.
- Recognizes newspapers as the main source of continuing education for members of the community once they are no longer in the classroom.

Source: http://www.wan-press.org/nie/
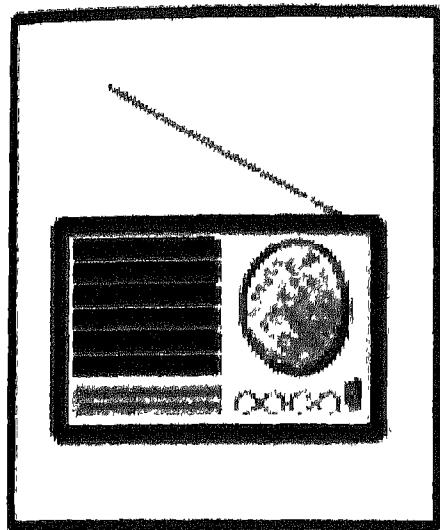
newspaper, you do not have to make thousands of copies of a programme. One transmitting station and one copy of a programme can service the needs of all the receivers within a given radius. Also, these programmes can be live. Television has the added advantage of being capable of carrying visual and moving images, but is more expensive than a radio transmission.

The All India Radio (AIR) and Doordarshan (DD), the national broadcasters in India, have carried many educational programmes. For instance, Tarang, an educational television capsule is telecast on the National Network of Doordarshan between Monday and Friday from 10 a.m. to 11 a.m. All local stations of AIR and DD carry programmes related to school education.

The broadcast media, as radio and television are generally known, enjoy some real advantages when compared to the print media. As mentioned earlier they need not be distributed. They can communicate aurally or visually and hence can transport you straight into the situation about which the reporting is being made. Keeping in mind that many of us cannot afford to visit so many different places and interact with so many different cultures, radio and television encounters can be very enriching indeed. With the advent of cable television and international channels, the experience has become even more rewarding. The choice is much more.

But at the same time, broadcast timings are pre-determined according to criteria, which may or may not be to our convenience. If, for instance, DD is carrying a programme on plants which
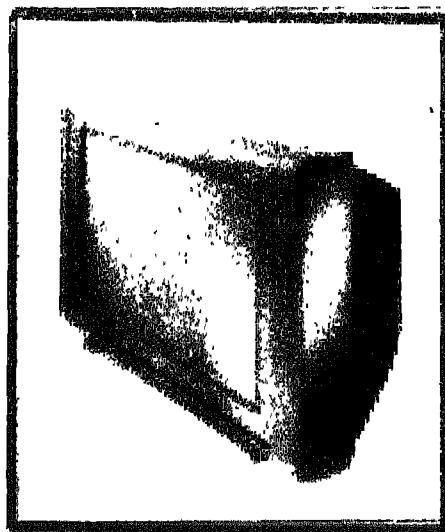
is of interest to children of Class III and if it is being telecast at some obscure hour, the only choice we have is to instruct children to watch it. If it overlaps with class timings and there is no facility at school, then the opportunity is simply lost. At a more down-to-earth level, if a programme is not understood at first go, there is no way the programme can be repeated or explanations sought.

The non-broadcast mode overcomes some of these limitations. An audio or video cassette can be played at our convenience and replayed back and forth as many times as we feel the need for it. But remember even then, the sequence of the programme is already determined and no changes are possible.

Experiments to make this medium interactive and two-way have been made. Two experiments conducted by the National Council of Educational Research and Training are noteworthy. In one, a special television broadcast was made to teachers grouped together in forty different places. A talk back mechanism using telephone and fax was provided for the teachers to interact with the panelists in the television studio. This way the teachers could get their queries redressed by the panelists through this one-way video, two-way audio link. A similar experiment using radio and telephone/fax was organized quite successfully. Such teleconferencing experiments demonstrate the possibilities of extending the capabilities of television and radio and do provide to some extent a distance education solution to teacher training. But the cost

and effort of organizing such programmes are very high and the impact limited.

The Road Ahead

Keeping in view the possibilities that the good old postcard, the newspaper, the radio and television provide, will it be possible for us to dream of resources in a *when we want it, where we want it* mode? Can educational technology provide a cost effective solution to the resource crunch? We have not alluded to the availability of these technologies in a normal classroom, nor have we referred to the power situation playing the villain.

One technology that appears to hold great promise and combines the features of almost all the technologies referred to above is the Internet. What are the
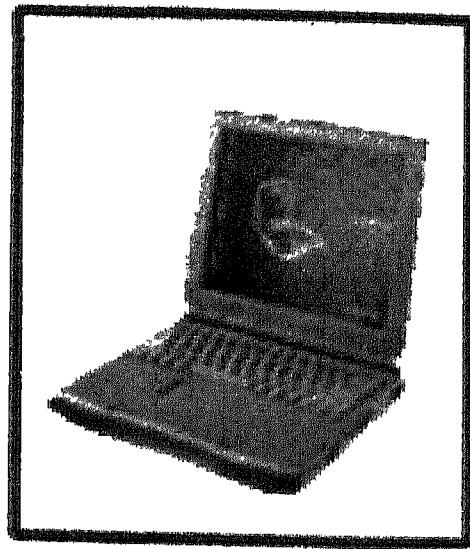
capabilities of this technology ? What are its ramifications? Can they really address our situations and problems ? These will form the main refrain in the next part of 'Teacher in a Web'. Till then, you could try out some of our suggestions and/or get back to us for more details. Happy '*ETing*' !

The Most Influential Teachers

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Senior Lecturer
District Institute of Education and Training
Kurnool

Parents are the most influential teachers when compared to the facilities available for early schooling. Eminent thinkers described early schools institutions, nursery schools and nurseries as torture cells. Pre-primary and nursery schools killed the creativity and the finer elements of freedom of children. Most of the thinkers, especially Indian thinkers, favoured the mental growth of children in a natural environment which gives scope for each child to develop its own inborn genius. Pre-primary, nursery and early child education centres imposed largely unwanted knowledge and information on young minds and created artificiality in education. This led to the destruction of their natural talents and the finer elements of early childhood.

> *The author is of the opinion that getting your child ready for school is the biggest responsibility and being a parent is the most interesting, challenging and rewarding job. Substantial parent involvement is a major feature of early schooling. This can include child health and social issues.*

The author is of the opinion that getting your child ready for school is the biggest responsibility and for a parent it is the most interesting, challenging and rewarding job. The child's first school report is not an assessment of its first few weeks in school. It is an assessment of its first five years at home, where the parents are the most influential teachers. A good start in school and at home is important to future success. Educational values that are not created and skills that are not developed cannot be made up later. Children should have visual and observation skills, listening and conversational skills, early language and reading skills, early mathematics skills, early manipulative skills, self-help skills, social and

emotional development, concepts of position and direction and concept of colour, texture, time, space and so on. As the child grows and learns new skills, parents should choose activities to keep pace with the child's development and they should help build confidence. Learning opportunities are precious and they cannot be repeated. A child's learning achievement is one of the greatest joys of being a parent. In a rapidly changing world understanding the world around them builds up their confidence. The curiosity of the child should be satisfied. A busy child is a happier child Family learning programmes have become a necessity. An investment in the child's future now could bring in big dividends for the rest of his/her life. It is sometimes difficult for the parents to find time to read to their children and answer all their questions. But it is very important because reading to them and answering their questions helps them as they progress through school. No matter how talented and committed the teachers are, good teaching alone cannot ensure the child's future. Research studies reveal that when parents are involved in their children's early education and day-to-day activities, their performance is better Unfortunately, for the children of today, many parents alone cannot do it all. Nearly 86 per cent of the time children are under the influence of the family up to the age of five years. What parents do during these crucial years at home is very important.

All children have the same advantages in the classroom; it is the home that makes the difference. Parents should realize the important role that they have to play for the success of their children. In recent times parents' desire to send their children to pre-primary or nursery schools even at the tender age of 3+ years in order to get them exposed to the institutional climate and to develop discipline. Though a curriculum exists for nursery schools the heads of the institutions, in a spirit of competition, formulate their own curriculum and prescribed textbooks and some notebooks, both for class work and home work. Psychologically, at this tender age education should be in the playway method. Contradictory to this parents as well as teachers are interested in stuffing the minds of children with overloaded curricular content rather than improving the conditions of joyful learning at home.

Children who do not have proper environment in the matter of discipline or modern gadgets can be sent to an Early Childhood Education (ECE) Centre or a pre-primary school but the trend is contradictory to that philosophy. Presently our nursery or pre-primary or ECE centres are flooded with children of rich and middle class families. In the above categories of families there are plenty of opportunities for them to learn the required discipline and inculcate the desirable positive habits. Majority of the parents from families are adequately qualified to teach their children. Government as well as externally funded schemes like District Primary Education

Prográmme (DPEP) are untiringly putting in efforts to strengthen pre-primary education through establishment of ECE centres in rural areas to meet the educational needs of the disadvantaged groups of children exclusively. Establishment of Anganwadis, Balawadis, Sishu Vihars and nursery schools are not benefitting most of the poorest of the poor children

As there is no prescribed curriculum in force, the private agencies assumed the role of self-styled educationists and prescribe textbooks and notebooks for them which are expensive. The heavy load of books may sometimes be a reason for development of aversion towards education at large. In fact the load of the books and teaching materials does not serve any purpose in bringing desirable changes at that tender age. Sometimes parents are forced to admit their children in pre-primary schools/ECE centres but this tendency may lead to undesirable attitudes. Though ECE centres help to cultivate the habit of school or help to prepare for effective schooling, there are those whose family background hinders their coping with the other children. Though it is a proven fact that the achievement levels of children who directly enter Class I is low, it is so only in the case of disadvantaged groups of children. Opening ECE centres for the benefit of the children belonging to disadvantaged groups is useful and needs to be encouraged.

The duties of parents towards the education of their children cannot be substituted for or shouldered by any third person as it may lead to negative thinking on the part of teachers. It is therefore desirable that necessary changes be brought about through our educational strategies adopted for the all-round development of the children. At all levels, education must be taken care of by the parents.

Writing Skill through a Silent Movie

An Experiment

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English has become the main language in almost all domains of life and India has emerged as one of the biggest consumers of the English language market outside the native speaking English world. There are at least twice as many English using Indians today than there were two decades ago (Chaudhary, 1994). They go to the market, they go to school, they go to the theatre, etc. But everywhere in every walk of life, sometime or other, they have to hear or answer in English and what they need is a communicative language, i.e. they have to comprehend, manipulate, produce or interact in English. In short, English is no more a subject to be learnt but a skill (reading, writing, listening and speaking) to be practised and developed.

> *English has become the main language in almost all domains of life and India itself has emerged as one of the biggest consumers of the English language market outside the native speaking English world.*

Our Traditional Classroom

Till today, our language classes are traditional that require learners to pay attention to specific linguistic properties (phonological, lexical, or grammatical) in order to learn them or to practise using them more accurately. Further, greater concentration is on completing the syllabus or textbook before the

forthcoming examination, always remaining conscious of the limited time and vast territory of the English language. In such situations, though the teacher knows about the importance of providing situations for the students, she is tempted to find an answer to her problem in the traditional textbook with its real classifications, its generalizations, its provision of mechanical exercises designed for application of the rules, but divorced from context and therefore devoid of meaning. This is why language learners who are familiar with the grammar of a language and know a vast amount of vocabulary may still fail, i.e. let themselves down in real communication. Our students, hailing from a rural set-up are no exception and they are sailing in the same boat.

The Needs of Today's Classroom

Today, language learning is seen as an activity which involves students as complex human beings, not simply as language learners and what we need is capitalizing their experience and incorporating into a more environment-sensitive communicative approach. They need practice in the specialized skills of reading, writing, listening and speaking, that determine communicative competence.

Hence, our real challenge with respect to English language teaching emerges when attempts are made to find effective ways of preparing students for spontaneous communication. Communication tasks are the only means that will develop learners' communicative skills and contribute to their linguistic development. In other words, communication tasks are important for both 'fluency' and 'accuracy'.

Communication Tasks

Communication tasks have been defined as tasks that involve the learner in comprehending, manipulating, producing or interacting in the target language while their attention is principally focussed on meaning rather than form. (Nunan, 1989).

Communicative Classroom

From a day and age, when we continue to hear much talk in history about communicative language teaching, curriculum planners are pre-occupied with communicative syllabus design; materials producers have flooded the textbook market with books carrying the label 'communicative'; testing experts have come out with batteries of communicative performance tests; teachers invariably describe themselves as communicative teachers. Thus theorists and practitioners alike almost unanimously, emphasize communication of one kind or other But the emphasis on communication seems to slacken, however, where it matters most: in the classroom, because the belief that language is learnt only from books dies hard, and continues to exert a stronghold on much classroom procedure, with the resultant frustration and confusion on the part of pupils.

The communicative classroom must be genuinely communicative by creating

learning opportunities in the class, i.e. creating conditions under which it will develop in its own way. Teachers and learners are co-participants in the generation of classroom discourse. Negotiated interaction between participants must be facilitated. 'Negotiated interaction' entails the learners' active involvement in the discourse features such as clarification, confirmation, comprehension, requesting, repairing and reaching. The learner should have the freedom to initiate interaction, and should not just react and respond to what the teacher says. The teacher should provide enough data that would activate the intuitive heuristics of the learner, so that he can infer and internalize underlying rules from their use in varied communicative contexts. Further linguistic input should be presented to learners in units of discourse so that they can benefit from the interactive effects of various linguistic components.

These strategies can be brought into the classroom using various techniques like discussion, relaying instructions, communicative games, problem-solving, talking about oneself, simulation and role-play, filmstrips, cricket scoreboards, etc. that demand a great deal of initiative and free responses from the students.

Feature Films as Text

Though the above techniques are associated with entertainment rather than study, they are not interesting to all age groups, at all times. Further, to avoid the monotony, cinema can be added to the list. Feature films are part of everyday life and one of the most easily accessible products. They are contextually rich source of authentic material. They are enjoyable, but it does not mean that they do not have pedagogic value. They open up a new medium for the language classroom, arouse high levels of motivation and result in a most satisfying learning experience (Voller and Widdows, 1992).

When students participate in activities in which they get involved, they will achieve well and, no doubt, today, the film industry is the best attraction of students. So feature films can be used to exploit students' affective and intellectual resources as fully as possible and be linked to their continuing experience of life.

Further, it was observed that the students studied were often engaged in discussing films with their friends. Hence, it was required to get rid of the real-world constraints by introducing the innovative practice of using film as a text in an English language class. The availability of TV and VCR also favoured the introduction of this new technique. In addition to its adaptability to all requirements of the classroom, whether the focus is on speaking or listening or writing or pronunciation, a film helps to create and sustain a high degree of motivation among learners.

Rationale for Selecting the Film

The film selected for this innovative practice was *Pesum Padam* (Speaking Picture) directed by B.C. Gowri Shankar

and the main actors being Kamala Hasan and Amala.

It was a film starring a famous actor of Tamil Nadu with a nationwide fan following. An English film, if selected, would not have been followed easily because of its different accent.

There was no dialogue or speech in the film and hence the influence of the mother tongue in learning the foreign language was controlled. Since it was a speechless movie the problem of whether the various language speaking students of the class could understand the film did not arise. Irrespective of their mother tongue, all could follow the film and it could not be categorized as a Tamil or English or Telugu or Hindi film.

Above all, the 'silence' was golden in not disturbing the neighbouring classes. Though speechless, it was not slow moving but active and realistic. Hence it was interesting. It paved the way for unrestricted imagination of the students. It did not assume detailed background knowledge of a subject or culture, which the students did not have; it had a strong story line and clearly drawn main characters.

It was about a poor, unemployed graduate who became rich, but returned to his own home leaving all luxuries. It was a colour film and one could hopefully believe that this film could be geared not only to the competence but also to the expectations of the Higher Secondary students, participating in the learning process. Hence this film was selected for maximizing the learning potential — writing skill.

.Objectives

The objective of the innovative practice was to facilitate English language learning. The skill to be developed was writing The specific objectives were:

1 To make the students understand the movie completely;

2. To enable them to interpret the film;

3. To help them express themselves in grammatically correct English.

Method of Introducing the Innovative Practice

Initially, the film was viewed by the investigator and the important themes, character development and other essential elements of the film as a whole were noted down Scene-specific questions and worksheets were prepared (see Appendix).

After completing all the formalities like getting the acceptance of the Head of the institution, this innovation was introduced for a group of 15 female students in Class XI. The students were prepared before viewing the film, with some questions about their favourite film, actor, actress, etc.

Then the film was segmented into seven parts of 20 minutes' duration, with the natural breaking of the story. After showing each 'chunk' students were given the balance time in a 45 minutes class for note taking and discussion, and the worksheets were completed.

At the end of the week, i.e. after viewing the whole movie a discussion about the film was conducted. Then the

students were given activities in four groups for the next one week. For the first three days activities on writing skills (and last three days activities on speaking skills were given). In each class they discussed in groups under the supervision of the teacher, who clarified and confirmed the facts and came out with a solution of the activity. The leader of each group read the paragraph written by them. Then follow-up programmes were organized.

Conclusion

Throughout the week the learners were active and not just reactive in the English class. A high degree of motivation among learners was created and sustained. The same feature film was used for developing both writing and speaking skills in different classes. The students' involvement was obvious in their interest and enthusiasm in writing the activities which were absent throughout the year in other classes. It was quite different from the usual composition classes in which they struggled with the routine unfamiliar topics.

Even those students who were silent in other classes were observed to be involved in the discussion. The class showed that films could arouse high levels of motivation and result in a most satisfying learning experience.

Recommendations

Teachers who have reservations about spending so much time preparing and using such 'uncontrolled' non-academic material should be made aware that free communicative activities are potentially much more efficient, and are also appreciated more by the students.

The same innovative practice could be brought out to the primary and pre-primary schools with the help of a cartoon film, or a Charlie Chaplin, or Laurel and Hardy film. Some documentary films like *Don't Play with Fire* would be informative to the students and at the same time provide a real language learning experience.

The practice may be used for developing all the skills of communicative competence. The teacher educators should make their trainees aware of these practices.

An experimental study could be conducted to find the effect of feature films on speaking, listening and writing skills. A comparative study of different aspects and different skills could also be carried out.

Above all, the examination pattern which is a nightmare to the teachers as well as the students, has to be reformed so that teachers could have some freedom from real-world constraints.

Though an English teacher behaves not only according to the needs of language learning, but also according to the norms set by other subjects the introduction of feature films as text has been a development from previous methodologies; and further improvement can only be achieved by further development, and not by going back. Research and the accumulation of experience through language teaching must always go on side by side and as far as possible, inform each other.

Worksheet

- Note down the various characters
- What is Kamal in this movie?
- Note down the features of city life
- What problems of our nation are depicted in this film?
- Why does Kamal get half-tea?
- How is the value of the degree certificate shown?
- Why does the beggar show Kamal the money?
- Why does Kamal go to the shopping complex?
- What does the long queue in front of the employment exchange imply ?
- Who is Amala? What is she? What are her parents ?
- Where does Kamal meet Amala?
- Why does Kamal lift the rich man?
- Why does he bring the tape recorder to the lodge?
- Who is Pratap Pothan ?
- Why does he want to kill the rich man?
- Why does Kamal return to his own place?
- What does Amala write to Kamal ?

Activities

- Imagine yourself as Kamal. What would you have done with the rich man if you were in Kamal's place?

- What would be your reaction if you found the murderer in your home?
- What would Kamal and Amala have talked about while they went shopping?
- Write a letter to your friend about the magic show in the film.
- Why does Kamal return to his own house leaving behind the luxuries?
- Write a review of this film to a daily.
- Why did Pratap Pothan want to kill the rich man? What might be the relationship between them?
- Write a paragraph about the technique used for murdering.
- Speak a few sentences about your favourite scene
- Give a talk about the techniques of the film.
- Suppose you are a witness to the murder, speak about it in a few words.
- Suppose you are meeting a relative of the rich man. Tell him about his drunkenness.
- Suppose you are invited to a film function to give a talk about the film. Give a short speech about it
- Imagine that you are accompanying your friend to a shopping complex What would you talk about?

Teaching Various Concepts of Science through Stories

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A STORY is a literary illustration. It is a short, fictitious, narrative or artistic expression. It conveys a symbolic meaning that is more important than a literary meaning. A story is designed to illuminate a spiritual truth or fact that makes a lasting impression on the listener or the reader. Hence each and everyone irrespective of age is interested to listen to or to read a story whether it contains fact or fallacy.

The moment the teacher says, "We are going to learn about...", students' internal ears get automatically closed though the external ears are open. Once they lose interest, they cannot comprehend anything and concept formation cannot be thought of.

Observation leads to comprehension that in turn leads to concept formation. To create interest and to make the students more receptive, a lesson can be introduced through a story involving the central theme of the lesson which has to be taught. The benefits gained by this approach are given below.

> *A story is designed to illuminate a spiritual truth or fact that makes a lasting impression on the listener or the reader. Introducing lessons through stories induces interest in students and brings about effective learning. It increases the IQ of the student, facilitates children to correlate concepts, increases vocabulary and brings about integrated teaching.*

1. It helps in integrating teaching.

2. Vocabulary increases.

3. Students develop liking for the subject and the facts become very clear.

4. It increases correlation.

5. IQ of students increases.

Story 1

To teach some characteristics of living things and to differentiate them from non-living things, the following story can be used as a handy tool.

Once upon a time, in the village *Agrahara*, lived a rich man named Shyamlal. He was a miser as well. He used to rent out big utensils for functions and occasions at exorbitant rates. As there was no other alternative, villagers used to borrow them irrespective of the high rent. In the same village lived a young man named Sunil. He was not only intelligent but also witty. Once he happened to borrow utensils from Shyamlal While returning, he returned small utensils along with those borrowed. Shyamlal being greedy unquestioningly accepted even the small ones. Sunil in his turn thanked him profusely and told him his bigger utensils had given birth to small ones. After six months Sunil once again borrowed the utensils from Shyamlal. This time he did not return the utensils giving the reason that all the utensils fell sick and breathed their last. Shyamlal took the case to the king. The king gave a date for trial. On the date of the trial, both Shyamlal and Sunil reached the king's court. Shyamlal accused Sunil of not returning his utensils giving non-practical reason that the utensils had died. Sunil in his turn put forth his argument, "Sir, I had borrowed his utensils six months back and had returned them along with small ones. He agreed with me when I told him his utensils had given birth to young ones and accepted the small ones too. Sir, if his utensils can give birth to young ones they have to die. But now he is not agreeing with me." Later Sunil told, "Sir, he charges high rentals, which poor people cannot afford. Hence to make him realize this I played this trick." The king ordered the rich man to reduce the rentals and rewarded Sunil for his intelligence.

Teaching Item

Only living things have the ability to give birth to young ones of their own kind. Ultimately, after a certain age (years), all living things die, whereas non-living things neither give birth to young ones nor die.

Story 2

To teach properties of light, the following story can be used as an effective measure.

In one of his durbars, Akbar asked his courtiers, "What is the whitest of all." A number of replies came from his courtiers. One said milk, the other said lime, some others said cotton, jasmine, dew, moon. Birbal kept silent all through. Akbar looked at Birbal for his opinion. Birbal said, "Sir, none of these is white." Akbar became very angry as he had almost accepted milk and lime to be the whitest of all. He ordered Birbal to prove his statement in a couple of days.

There were no restrictions on Birbal's movements in the palace, as he was one of Akbar's trusted friends. One hot

afternoon, when the king was asleep, he ordered the king's attendants to close the curtains and to keep a bowl full each of milk and lime near the bed. Akbar could not sleep any longer as the curtains were closed. He impulsively got up to open the curtains. When he stepped down, he almost toppled and felt his feet wet. He became very angry and shouted for his attendants. In the meantime Birbal entered his room. The attendants opened the curtains. Birbal said with bowed head, "Sir, please forgive me. To prove milk and lime have no colour in the dark, I had instructed the attendants to do so. Things get coloured only in the presence of light." Next day in the court, Akbar praised Birbal sky high and rewarded him with a bag of gold

Teaching Item

Things appear coloured only in the presence of light. Without light everything is dark.

Story 3

To teach that machines made by man are handy tools only if used in the proper way, or they may prove fatal.

A machine is a device which makes our work simple, fast and efficient. The present age is that of the robot. It was a small family with a husband Ashok, wife Suma, and a little child, Deepak, three months old. Suma was on maternity leave and the following Monday she was to report for duty. Her worry was where to leave little Deepak when she was at work. Ashok was an engineer. He designed a robot and gave all instructions to it starting from giving the feeding bottle to Deepak to changing his nappy. Days rolled by smoothly. Everything was working out fine. Once the news spread that child lifters were around. "Beware of child lifters" was announced in newspapers, radio and TV. Again Ashok sat with his robot and gave instructions to keep the child safe from child lifters. Suma was anxious to go home and see whether Deepak was safe. She took a half day leave and rushed to her apartment. In the evening when Ashok returned home, he was shocked to see his beloved murdered by the robot. He had instructed the robot to kill anyone who came into the house before 5 00 p.m. Being a machine, the robot was unable to distinguish between Suma and an outsider

Teaching Items

1. Machines are slaves of humans if they knew how to extract work; otherwise human beings become victims of machines.

2. The same idea can be extrapolated to nuclear devices. If they are used for the good of mankind, we will be benefited, otherwise it can destroy us in no time.

I adopted this method of introducing a lesson through a story for almost all topics in science. Epics, anecdotes and some make-believe stories were made use of as introductory tools. I found that it had a lasting impact on the students and the learning outcome was better than expected.

Importance of Play Activity in Pre-school Childhood

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Play is a serious matter for a child. It is life itself, cognition, and work; it is the overcoming of the self. Directing children's play is a problem for adults. It is perhaps here that most attention, patience, tact and the ability to look at the child impartially are required of the adult in role playing; children satisfy their aspiration for a joint life with adults and in a special play form recreate adult relationships and work activity.

> *Activities like dramatization, rhymes, songs, games involve physical participatior of the children in something which is fun for them. These should not only be joyful and interesting but need to be well planned by teachers.*

Elements of role playing arise and begin to develop in early childhood. In pre-school age play becomes the leading form of activity.

General Features of Play Activity

When a child manipulates an object or does something an adult shows him/her how to do (especially if this action is carried out with a toy and with the real object) we say that the child is playing. But real play activity arises only when the child uses one activity to simulate or signify another, and uses one object to mean another. Play activity is symbolic, and it is here that the developing symbolizing function of the child's consciousness is most clearly observed. Its appearance in play has its own peculiarities. Play substitutes for objects may resemble those objects far less than a drawing resembles the reality represented. Nevertheless, it must be possible to act with them as one would with the substituted object. Therefore, in naming the substitute object himself/herself and ascribing

certain properties to it, the child also takes into account some·of the properties of the substitute object itself. In selecting object substitutes, the pre-school age child proceeds from real object relationship. He is ready to agree, for example, that half a match will be a baby bear, a whole match a mama bear and a match box a little bed for the baby bear. But strive as hard as you will, he will never accept a version in which the box is the baby bear and the bed is a match. The usual reaction of a child is, "That's not the way it is".

In play, the child not only substitutes objects, but adopts a role himself and begins to act in accordance with this role In play, the relations existing between people and the rights and obligation of adults are first revealed to the child.

In the role game, children reflect the diverse realities around them. They reproduce scenes from family life, from adult work activities and relate things, and reflect epoch-making events in the life of their country. The wider the sphere of reality with which the child comes into contact, the wider and more varied are the subjects of games. Naturally, therefore, the young pre-school age child has a limited number of themes for games, whereas the older pre-school age child has an extremely varied range.

With the increasing diversity of subjects comes an increase in the duration of the games. For three- to four-year-olds, the duration of a game is only 10-15 minutes, while with older pre-school age children games may last for several hours or even days.

Both the youngest and the oldest pre-school ages have certain play themselves in common (mothers and daughters, kindergarten), but they are acted out differently; within the framework of the same theme the game, such as 'polar explorers', becomes more varied with age. For the youngest, this game is reduced to one activity—sailing on an ice breaker. Later a social hierarchy appears among the participants in the polar epic, ("who's the chief"), as do rules of conduct for the captain, engineer, radio operator, etc. Finally, internal social relations (moral and higher emotional factors) are put in the centre. Alongside the theme we also have to distinguish the content of the role game, what the child singles out as the basic factor in adult activity. Children of different age-groups introduce different kinds of content into a game. Children of the youngest pre-school group will repeat the same action with the same objects again and again. Playing at 'having dinner' the small children cut bread, cook porridge and wash the dishes, but do not give the cut bread to the dolls at the table, do not dish up the cooked porridge onto plates, and the dishes are washed when they are still clean. Here the content of the game is reduced exclusively to activities with objects.

The play theme, like the play role, is usually not planned by the young pre-school age child, but arises depending on what object comes to hand. If he/she has a thermometer then he/she is a doctor; a frying pan makes him/her a cook. Basic conflicts between children

break out over the possession of an object with which one produces the activity. So there are very often two drivers in one car, several doctors examining one patient, and several cooks preparing dinner. From here we get a frequent change of role, associated with the transfer from one object to another. At the same time, in a number of cases with three- to four-year-old children relations between people may form the content of a game, but still in a very narrow, limited number of themes. Usually these are games connected with the direct practice of the children themselves.

Later, the reconstruction of people's relationships becomes the principal factor in the game. Actions carried out in a game by a four- to five-year-old child are no longer repeated endlessly, but one activity replaces another. In this there is expressed a certain attitude towards another person or a doll, corresponding to the role adopted. For example, a child, playing at 'having dinner', cuts bread and puts it on the table. Offering the dolls, representing children, porridge, the child who has taken on the role of mother, or nurse, makes sure that all the children (dolls) eat up their porridge and don't talk to each other while eating.

As they get to know the social life of adults through games, children come to increasingly understand people's social functions and the rules governing relations between them. The content of the role game by five- to six-year-olds becomes subject to rules flowing from the role adopted. Children of this age are extremely finicky about the observance of rules and quarrel about what happens—"Mothers don't do things like that", "Does a doctor really treat a patient like that?" and so on. In this way the development of theme and content in the role game reflects the child's ever deeper penetration of the adult life around him.

There are two kinds of relationships in play—pretended and real. Pretended relationships reflect the relationship according to theme and role. Thus if a child adopts the role of the villain, in accordance with the subject he will behave with exaggerated wickedness towards the children playing other roles. Real relationships are children's relations as partners and comrades engaged in a common activity. They may agree on a subject, on the distribution of parts, and discuss problems and misunderstandings that arise during the game.

Specific kinds of relations arise among children in the course of play. Play demands of the child qualities such as initiative, sociability and the ability to coordinate his own actions with those of his peer group, in order to establish and maintain contact.

Elements of contact appear very early, when children are still unable to construct a detailed game on a topic but play individually. each one for himself In this period of development of play, the child usually concentrates on his/her own activities and plays paying little attention to what another child is doing. Nevertheless, every so often the child,

having had a surfeit of his own play, begins to watch another child playing. Interest in his fellow's game leads to attempts to establish certain relations. The first kind of relation manifests itself in the desire to draw closer to the other child, to play along with him/her to give up part of the space occupied by his/her game, or in a timid smile at the other, at the moment when their glances meet. These slight contacts still do not change the essence of play; each child still plays on his/her own.

At the next stage (three- to five-year old) he/she begins to mix more intensively with children of his/her own age. He/she actively looks for reasons for joint activities in order to establish contacts In this case, the duration of the relations depends on the extent to which the child has mastered the use of objects in play and the ability to create and implement an idea for play.

During the period when play consists only of the most elementary manipulations with toys, a child's joint activities with someone of his/her own age are short-term. The content of the game still does not provide a basis for a stable relationship, but at this stage children may exchange toys or help one another.

As play skills develop and ideas for play become increasingly complicated, children begin to enter into relations of longer duration. The play itself demands and facilitates it. Penetrating deeper into the life of adults, the child observes that this life takes palce in society, in relation with other people. Mother talks to father, serves the family dinner, and watches over the children's behaviour at the table. The shop assistant serves the customers, the doctor treats the sick and the nurse helps him, etc. The desire to reproduce adult relations in play leads to the child beginning to feel the need for partners who will play with him. From this arises the need to come to an accord with other children and together organize play that involves several roles.

In joint play children learn the language of social intercourse, learn to coordinate their own activities with another's, and learn to understand and help each other.

The coming together of children in joint play facilitates the further enrichment and complication of the content of the game. Each child's experience is limited, he/she is acquainted with a comparatively narrow circle of adult activities, and in play there is an exchange of experience. Children copy one another's accomplishments, and turn to adults for help. As a result, games become more interesting and varied. The complication of the content of a game leads, in turn, to the complication of actual relations, to a greater number of participants and to the need for a more detailed coordination of their activities.

Children's theme games and their real relationships differ in psychological content. In specially conducted experiments it was established that in situations involving theme role relations, children conform to moral standards and rules far better than they do in

everyday life situations. Real life relations create greater tension in children than play relations do. In play a child who has adopted a particular role easily fulfills all the requirements of the role, including moral rules.

As the ability to create a detailed scheme and to plan joint activities develops, the child finds it necessary to discover his place among the players, establish connections with them, understand their wishes, and balance his own wishes and capabilities with theirs In doing this each child learns to behave in conformity with the general conditions of the game and the composition of the given group. On joining in a game children display individual peculiarities. One shouts commandingly, "I'll be chief ! Me !" Some of the children will quietly accept this. But there may also be a child whom this suggestion does not suit, so conflict arises. The child who is dissatisfied with the distribution of roles may categorically refuse to take part in the game: "I won't play with you That's all!" But he may also oust the claimant to the leading role: "Everybody come here! I'll give the orders!".

If the children are unable to agree among themselves the game will collapse, but interest in the game and the desire to take part lead to the children making mutual concessions.

Role of Play in the Development of Mental Activity

A child's mental characteristics and personal peculiarities are most intensively developed in play activities. Other forms of activity which subsequently acquires an important all their own also evolve during play.

Play influences the formation of voluntary psychological processes. In play, voluntary attention and memory begin to develop. In play situations children concentrate better and remember more than on specially organized situations. A conscious aim is singled out for the child earliest and earliest of all in play. The very conditions of a game demand that the child concentrate on objects included in the play situation, and on the content of the activities and topics involved. If a child does not want to pay attention or does not remember the rules of the game, then the others simply exclude him from it. The need for intercourse and emotional encouragement compels the child to concentrate purposefully and memorize things.

Play situations and the activities involved steadily influence the mental development in pre-school age children. The child learns in play to act with a substitute object, which becomes a prop for thinking. Through activities with substitute objects, the child learns to think about the real object. Play with objects is gradually reduced, and the child learns to think about objects and activities with them on the mental plane, which encourages the development of the imagination.

At the same time the experience of play, and particularly of real relationships in the role-theme games, underlies a

special way of thinking that enables the child to appreciate others' point of view, to anticipate their future conduct, to analyze his own actions and to construct his own conduct on this basis.

Play has a great influence on the development of speech. A play situation requires from each child a specific level of development of vocal exchanges. If the child cannot intelligibly express his/her wishes about the progress of the game, or is unable to understand the oral instructions of those taking part in the game, he/she will be a burden to them. The need to be understood by children of one's own age stimulates the development of coherent speech.

Productive activities like drawing and building things are linked to various stages of pre-school childhood closely meshed with play. When drawing, they often play through a certain theme. The animals the child has drawn fight with each other, chase one another; people go visiting and return home; the wind blows apples off the trees, etc. An interest in drawing and building things arises initially as a play interest directed towards the process of making a drawing or building something in accordance with an idea for playing; it is only in middle and senior pre-school age that the interest is transferred to the result of the activity and freed from the influence of play.

It is within play that learning activity, which subsequently becomes the leading activity, also begins to evolve. Learning is introduced by an adult and does not arise directly from play. But the pre-school child begins to learn while playing, and he looks on learning as a distinctive role game with specific rules. Even so, as the child obeys these rules, he unconsciously preforms elementary educational activities. The radically different attitude that adults have towards learning as compared to this attitude towards play is gradually adopted by the child. The desire for learning and the initial ability to learn are created.

Primary Education in India

Some Issues and Problems

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The twentieth century was a period of scientific and technological advancement, accelerating the process of industrialization and urbanization in all countries. Along with industrial and economic development, the century witnessed an upsurge of national movements, which led to the independence and birth of many new nations; tomorrow's world will be one of the accelerated change and ever deeper interaction. Education is already the highest and the biggest industry of many countries. Education now means full social and political involvement. Greater reliance than ever before is placed on education—particularly on primary education.

The Constitution of India in 1950 envisaged universal free and compulsory education within ten years but it has remained a dream due to paucity of funds, lack of qualified teachers and other problems that the country had to face from time to time. There are more illiterates today than before because a little increase in literacy is offset by the ever increasing population. It will not be out of place to mention that Russia achieved the target of cent per cent literacy within this period. The reason was that top priority was accorded to education in that country.

> *Efforts have continued through years to restructure primary education in the country to suit natural conditions. NPE, 1986 recommends measures to effect improvements in the quality of education through reforms of content of education, improvement in school facilities, and giving access to education to every child.*

India has a long tradition of learning and probably one of the earliest universities of the world was established here. But due to historical reasons education declined and we have yet to cover a long distance before we can stand on equal footing with the more developed nations. We could not develop a synthesis or a system that could be considered typically Indian. What we have today is unsystematic, alien in character, outdated and an ineffective system of education.

Pre-primary Education in India

Nursery and kindergarten school are of recent origin in India, confined largely to urban areas. They usually cater to a small fraction of upper and middle class children. The aims of nursery education have been defined by Clark Mousttakes and others in these lines.

The nursery school recognizes how important it is for young children to learn routine health habits. Activities are planned to strengthen and facilitate the use of their large and small muscles, build coordination and develop sound and strong bodies. The nursery school guides the child in experiencing the stimulation and enjoyment that come from the association with persons both younger and older than himself as well as with those of the same age. It offers many opportunities for sharing and cooperating and helps children learn when and how to share. The encouragement of national thinking, fair-play, self-reliance and individual freedom and responsibility are all part of the nursery school values.

Thus, the nursery school must be concerned with the enhancement of the child's individuality and development of attitudes, interests, understanding and beliefs which will enable the child to be a happy, secure, contributing member of society. To reach these goals the nursery school must have an emotionally warm, friendly and relaxed atmosphere.

On the other hand, we have the kindergarten school. The kindergarten stage may be described as an advanced stage or the next higher level of nursery education. Usually kindergarten schools cater to the education of children in the age group 3-6. Though kindergarten education is not compulsory, it is very popular. Many states in India have accepted it as the first primary unit of education. Every state government has legislation for providing assistance and setting up kindergarten schools The state governments have appointed officers and experts for guidance and inspection of these schools. In some states special teachers have been appointed in primary schools, for looking after the kindergarten education.

We know that about 75 per cent of our people live in rural areas where pre-primary education is non-existent. Though the nurseries and kindergarten schools were started in the developed countries with a view to helping working mothers, they are considered an integral part of the child's early education for his physical, emotional and intellectual development. Its importance has been recognized in India but it has not made

any appreciable progress. There are very few pre-primary schools which are well equipped or have properly trained teachers.

Primary Education in India

Primary education plays an important role in any developing country. But in India, there is no uniformity of pattern and most primary schools have five grades. A child usually enters the first grade at the age of six or seven and continues till eleven or twelve. The old pattern is gradually changing and it has been realized that the minimum period for which the child should be in school is seven years. This would eliminate large scale wastage and stagnation at the primary level. Gandhiji's basic scheme also envisaged seven years' compulsory schooling for all children. His Basic Education, also known as the Wardha Scheme, was to be adopted as a pattern of education, for the entire nation but so far it has not been practical for various reasons. Even those institutions which call themselves 'basic' are not following the Wardha Scheme, essentially.

Aims of Primary Education in India

The general objectives of primary education are more or less the same as in other countries. It aims at giving adequate mastery over the basic tools of learning, development of the child's personality, preparing children for good citizenship and inculcating in them a sense of the dignity of labour. But by and large, these aims are rarely attained.

Curriculum for Primary Education in India

Curriculum in our own primary schools is largely bookish and theoretical. It is narrow and confined to giving training in the basic tools of learning.

Administration in Primary Schools of India

Primary education is administered by state governments, local bodies or private agencies. The agency for administration differs from state to state. The government institutions and schools run by district or municipal boards are largely free, but the quality of education is the poorest in them. The private institutions which get financial support from the government or through other sources, are better equipped in respect of teaching personnel and other facilities. Expenditure on primary education is met by the state government and local bodies through taxation. The government also helps by giving grants for development and improvement of existing facilities.

Problems of Primary Education

There are two types of problems of primary education in India — special and general.

Special Problems of Primary Education

Drop Out: For most Indian children the primary stage of education is the terminating point. Though the increase in enrolment at the elementary stage has been satisfactory, the problem of drop-

outs has been alarming and has been more or less negating the progress achieved. Of every 100 children enrolled in Class I only about 40 reach Class V and only about 30 reach Class VII. Most of those who drop out after Class I or II relapse into illiteracy and add to the growing number of illiterates.

Uneven Facilities: There has been large-scale expansion in the field of primary education, yet we have not been able to provide adequate facilities for all children of school-going age Seventy per cent of the non-enrolled children are in nine states which are considered educationally backward. These are Rajasthan, Uttar Pradesh, West Bengal, Orissa, Madhya Pradesh, Jammu and Kashmir, Bihar, Assam and Andhra Pradesh.

Coverage of Area: India is a big country. Most of the people (about 70 per cent) live in rural areas. Primary schools are not very far from their homes, whereas, in urban areas primary schools are located in each and every colony. According to the Fifth All India Educational Survey (1986) about 80 per cent of the rural population was served by primary school/section within the habitation. More than 94 per cent of the population had a primary school/section within one kilometer. In respect of the upper primary stage of education, these figures were about 36 and 85 per cent respectively

Building and Other Facilities: About 73 per cent of the primary schools had pucca or partly pucca buildings. About 14 per cent were housed in kachcha buildings. Many sections in the primary schools did not have blackboards Twenty-eight per cent of the primary schools were single-teacher schools.

General Problems of Primary Education

● Providing equal educational opportunities

● Minimizing wastage and stagnation

● Improving school buildings

● Improving the service conditions of school teachers

● Increasing enrolment of girls

● Improving inspection of primary schools

● Removing administrative bottle-necks

● Providing appropriate training of primary school teachers.

Measures Given in the National Policy on Education

It had been resolved in the NPE, 1986 to provide free and compulsory education to all children up to the age of 14 years by 1995. The following measures have been envisaged.

1. *Child-centred Approach:* A child-centred and activity based process of learning should be adopted at the primary stage. First generation learners should be allowed to set their own pace and be given supplementary remedial instruction.

2. *Abolition of Corporal Punishment:* Corporal punishment will be firmly excluded from the educational system.

3. *Suitable School Timings:* School timings as well as vacations will be adjusted to the convenience of children.

4. *Non-detention Policy:* Detention at the primary stage will be firmly excluded from the educational system.

5. *Operation Blackboard:* Provision will be made of essential facilities in primary school, including at least two reasonably large rooms that are usable in all weathers, and the necessary toys, blackboards, maps, charts and other learning material. At least two teachers, one of whom is a female, should work in every school, the number increasing as early as possible to one teacher per class A phased drive, symbolically called Operation Blackboard will be undertaken with immediate effect to improve primary school all over the country. Government, local bodies, voluntary agencies and individuals will be fully involved. Construction of school buildings will be the first charge on National Rural Employment Programme (NREP) and Rural Landless Employment Programme (RLEP) Funds. Action has been initiated in this regard.

6. *Non-formal Education:* A large and systematic programme of non-formal education should be launched for school drop-outs, for children from habitations without schools, working children and girls who cannot attend full-day schools.

7. *Use of Modern Technology:* Modern technological aids should be used to improve the learning environment of NFE centres. Talented and dedicated young men and women from the local community should be chosen to serve as instructors and particular attention paid to their training. Steps should be taken to facilitate their entry into the formal system in deserving cases. All necessary measures will have to be taken to ensure that the quality of non-formal education is comparable with formal education.

8 *Effective Curriculum:* Effective steps should be taken to provide a framework for the curriculum on the lines of the national core curriculum but based on the needs of the learners and related to the local environment. Learning material of the highest quality must be developed and provided free of charge to all pupils. NFE programmes should provide participatory learning environment and activities such as games and sports, cultural programmes, excursions, etc

9. *Voluntary Agencies and Provision of Funds:* Much of the work of running NFE centres will be done through voluntary agencies and Panchayati Raj institutions. The provision of funds to these agencies will be

adequate and timely. The Government will take over all responsibility for this vital sector.

10. *Construction of Buildings Under Operation Blackboard:* Funds for the construction of school buildings are provided mainly under NREM and RLEGP. Funds for other components are provided by the Deparment of Education. The scheme seeks to cover the primary schools in all the blocks/Municipal areas in the country in a phased manner. The target was to cover 20 per cent blocks/Municipal areas during 1988-89 and 50 per cent of them during 1989-90.

During 1987-88, under the Central Scheme of Operation Blackboard assistance was provided to 27 States/ Union Territories 1.13 lakh primary schools (21.43 per cent of the total primary schools in the country). Thirty-seven thousand additional posts of teachers were sanctioned. The total amount released under the scheme was Rs 110.61 crore. It included Rs 81.13 crore for providing teaching-learning equipment to schools and Rs 29 48 crore

for salary to additional teachers provided in single teacher schools.

11 *Midday Meal Scheme:* The midday meal programme in operation in 19 States/Union Territories involved Rs 145 crore in the fiscal year 1988-89.

Thus, after Independence there has been large-scale expansion in the field of primary education, yet we have not been able to provide adequate facilities for all children of school-going age. That is why we are not able to make it compulsory. There is a fixed age at which every child has to be admitted to the first grade and we have a heterogeneous mass with regard to the age of children. Besides the large number of failures in each class and drop-outs who are free to leave the school at any stage have created multifarious problems. Most schools, particularly in the rural areas, are ill equipped, with poor quality teachers which obviously results in poor quality output. Our government should make rules and regulations against those parents who prevent their children from going to school using the pretext of poverty and other problems.

Letter to Teachers

Helping Children Learn English

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DEAR Teachers,

You can help children to learn English provided you equip him/her with the School Readiness Indicators for the first six weeks of the Class I session. Often children come to Class I without any exposure to English. The total responsibility is on you so why not start with week-wise indicators and see the results for yourself. Having provided the base the road is clear for expanding the subject i.e. English Language.

SCHOOL READINESS. INDICATORS FOR ENGLISH LANGUAGE

After First Week

- Child is able to respond to questions like the following in English.
  - What is your name ?
  - What is your father's name ?
  - What is your mother's name ?
  - Where do you live ?
- Child has the vocabulary related to his/her belongings like bag, water bottle, book, tiffin, etc
- Greets his/her teacher
- Indicates verbally his/her basic needs i.e. water, toilet, etc.
- Is able to ask permission to go out or come inside the classroom.

After Second Week

- Is able to appropriately use words like please, sorry and thank you.
- Is able to follow simple instructions like
  - Children please get up.
  - Please sit down.
  - Please sit in your groups.
  - Please sit in a circle; in a semi-circle, etc.

After Third Week

- Is able to name the objects that he/she comes across in his/her day-to day life. For example,

  Stationery

  Books, different colour pencils, foot-ruler, etc.

  Dress

  Frock, blouse, skirt, shirt, pants, shorts, etc.

Utensils

Rolling pin, board, spoon, plate, cup, blow, etc

Animals and Birds

Dog, cat, rat, snake, cow, pig, sparrow, parrot, crow, etc.

Flowers

Rose, jasmine, chrysanthemum, lily, etc.

Cooking Ingredients

Pepper, salt, sugar, turmeric, coriander, etc.

Means of transport

Cycle, motor cycle, car, truck, tonga, bus, aeroplane, helicopter, boat, etc.

Food Items

Chapati, pulses, vegetables, fruits, sweets, etc.

- Can recite short poems.
- Is able to understand simple and short sentences and questions.

After Fourth Week

- Is able to speak simple sentenes.
- Is able to ask and answer simple questions.

After Fifth Week

- Can understand a short story that is narrated.
- Can tell a short story with the help of story cards.

After Sixth Week

- Takes initiative to talk in English.
- Can tell a sotry from a picture book.

REMEMBER

For fostering English language there is need to provide an environment in the classroom

— which should motivate the child to feel the need to learn English,

— which should enable the child to be exposed to the English language;

— which should not be discouraging but encouraging;

— in which the child should be allowed to make errors and learn the language in a spontaneous and natural way.

Micro-analysis of the Four Fundamental Operations in Mathematics

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Mathematics is the oldest organized discipline of human knowledge. It is a body of ideas structured by logical reasoning. The facts, principles and methods developed in early Mesopotamia, Egypt and Greece, play central roles in the subject as it is learned and used today. The beginning of civilization necessitated a knowledge of counting for man. This led to the discovery of numerals, and later on arithmetic was developed. Arithmetic is a branch of mathematics. The basic operations in arithmetic are addition, subtraction, multiplication and division of numbers popularly known as the four fundamental operations. Besides language, this is the only other subject which is essential for everyone in life so it becomes an important and essential component of the present curriculum in schools. A student studies these operations from early childhood, yet find them very difficult and their performance is not very satisfactory

Generally students are in awe of this subject. Unless and until the concepts are clear at the very beginning students cannot understand nor solve the problems. Mathematics is an art of understanding. A child has to exert his/her mind in solving the problems It increases the power of intuition.

> *The beginning of civilization necessitated a knowledge counting for man. This led to the discovery of numerals, and later on arithmetic. The basic operations in arithmetic, addition, subtraction, multiplication and division of numbers, are popularly known as the four fundamental operations.*

Students of Class II from D M.S., Bhopal were asked whether they liked mathematics or not and why ? Out of 150 children 95 children did not like the subject. They said that if they committed a very small mistake they lost full marks because the answer was wrong. Others said they were not able to understand the language of the problem and so it became complicated The remaining 55 liked mathematics as they said the subject was to understand, they did not have to cram each and every answer, and once the concept was clear they could solve many problems correctly. These students were helped by their parents.

But sometimes parents could not guide their children. May be they were not educated or they did not have time. Or sometimes they thought that once the child had been admitted in school he/she was the responsibility of the institution. But in a class of 40-50 children it is very difficult for a teacher to pay individual attention in a period of 35 minutes

In mathematics, while dealing with the four fundamental operations students fail to cope up with the requirement of the subject.

Purpose

The purpose of the present project is to micro analyze the four fundamental operations in arithmetic for Class II and provide a model for teachers so as to develop accuracy and speed among the students while dealing with these operations

Time Required

The project was started in the month of July and was completed in about 75 periods in October. After Diwali vacations, again a test was conducted without prior intimation to judge the retention power of the students.

Previous Knowledge

Students know simple addition and subtraction of one digit number and multiplication tables up to five.

Objectives

1. To help students to understand the concept of the four fundamental operations.

2. To help students to solve the problems on their own.

3. To help students to solve the problems quickly.

4. To develop a liking for mathematics in students.

Procedure

Introducing any operation directly in the class on the basis of the previous knowledge of the students is a difficult task. At the same time a teacher cannot achieve better results, and students may not attain perfection in that particular operation. Keeping these problems in mind, each operation was divided into sub-components. A student was required to attain perfection at each stage. Only then was he allowed to proceed to the next stage. These sub-

components were arranged in hierarchical order.

One sub-component was explained in the class followed by five questions for the classwork and the answers were checked. (The number of questions depended on the requirement of the student. The teacher could give more questions but not less than five) and checked. Then five questions were given for homework and checked the next day.

A test based on the same type of questions was conducted to test the accuracy, perfection and speed of the students on a particular sub-component. A chart was prepared showing the four fundamental operations and their sub-components (Table 1). In the same way the reamining three operations were explained.

TABLE 1

Sub-components or Sub-stages of the Four Fundamental Operations

Addition

1 Two digit numbers without carry over.

2. Two digit numbers with carry over.

3 Two and three digit numbers with carry over and having zero and units and ten's places.

Subtraction

1. One digit number from one digit number.

2 One digit number from two digit numbers.

3 Two digits from two digits without borrowing

4 Three digits without borrowing.

5 Two digits with borrowing.

6 Three digits with borrowing

    a Borrowing from tenth place only

    b. Borrowing from hundredth place only.

    c. Borrowing from both the places

Multiplication

Students will learn multiplication tables from two to 10

1 Multiplication of two digit numbers

2 Multiplying a number by one

3 Multiplying a number by zero

4 Multiplying a number by 10

5 Multiplying numbers by 100

6 Multiplication without carry over

7 Multiplication with carry over

Division

1. Explain some division facts.
   a. Division of a number by number itself
   b Division of a number by one
   c. Division of zero by a number
2. Division of numbers by using multiplication tables.

Result

After completing the project it was found that 90 of the students were able to solve the problems correctly on their own. The remaining 10 could not get perfection in all the four, but could do simple addition and subtraction. The reason was they could not learn multiplication tables up to five.

As the concept of the four fundamental operations became clear to be the students of Class II it was observed that the students became more interested in the subject. They enjoyed the maths period because they could do the exercises very fast. There was an improvement in their speed.

Classroom Feasibility

To attain perfection in the four fundamental operations of mathematics a child of Class II requires about 75 periods and the teacher also gets enough time to complete the syllabus.

Conclusion

Explaining any such operation in totality in a class without paying attention to the different sub-stages of the operation is a mistake. These stages are in hierarchical order and if we start from the lowest stage and proceed to the highest, the students will not find it very difficult and will understand easily.

Negotiating Primary School Curriculum

Explorations in Teachers' Abilities

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IN the recent past India has witnessed substantial improvement in the enrolment as well as retention of children at the primary level of education. However, the achievement of children continues to be very low at primary level (World Bank, 1997). A study conducted by NCERT on a sample of 65,000 urban and rural Class IV students in 23 states, revealed that the average achievement on Class IV curriculum based basic skills tests of arithmetic, reading comprehension and spelling was 46.4 per cent (Shukla, et al., 1994). Another study on student achievement found that about 70 per cent of Class IV students and 60 per cent of Class V students from schools in "an urban zone" in Madhya Pradesh had not mastered competencies in Hindi and Mathematics that would be expected of Class II students and in a *highly underdeveloped rural zone* no Class IV or V student had mastered the Class II competencies (Govinda and Verghese, 1993).

> *In the recent past India has witnessed substantial improvement in the enrolment as well as retention of children at the primary level of education. However, the achievement of children continues to be very low at the primary level. A study conducted by NCERT shows links between achievement of students and skills of teachers.*

Studies on learning achievement among primary children in India have often linked low achievement to poor subject mastery and limited teaching skills of teachers (World Bank, 1997). The poor content knowledge of primary school teachers may be due to the fact that they are called upon to teach all subjects i.e. language, mathematics, and environmental studies (social studies and science). The teacher may be proficient in one or two subjects which he/she had studied at the +2 level and may not be that good in other subject areas which he/she is teaching. Several research studies have reported lack of strong foundation among primary teachers in the subjects they teach. For example, Bashir (1994) reported that only 39 per cent of rural and 53 per cent of urban primary teachers in Tamil Nadu could correctly answer four of five problems on a short mathematics test, the most difficult of which required finding the sum of two fractions with a common denominator and finding the perimeter of a polygon with given dimensions. The study also reported that only half of Class IV teachers who were tested, could correctly answer 80 per cent of the questions on a test of Class V mathematics. Significant deficits in teachers' knowledge of mathematics, environmental studies and Kannada language have been reported in Karnataka also (World Bank, 1997).

Gupta [1996] reported that nearly half of the teachers of Madhya Pradesh could not answer correctly mathematics question on multiple factor and could not identify the central idea in a paragraph in Hindi on tests of mathematics and reading meant for students.

Preservice training courses provide little opportunity to prospective teachers for improving their subject knowledge. Further, courses keep on changing due to advancement in knowledge and therefore teachers (especially those teachers who have more teaching experience) continuously require upgradation of their content knowledge. To develop a plan of action for upgradation of teachers' knowledge of content, it is essential to identify the existing content knowledge i.e. their strengths, weaknesses and gaps in content areas.

The content related needs of teachers (their existing knowledge, weaknesses) can be identified by using a variety of tools and techniques e.g. giving them questionnaire having items related to content areas, observing their classroom teaching, organizing group discussion with them and give them content based achievement tests. The achievement tests are likely to prove more useful for purpose as they provide greater scope to assess teachers' content knowledge in a particular subject/topic and gaps if any in their knowledge, their weaknesses in a content area can be identified and accordingly training inputs could be designed. However, teachers generally are reluctant to write content based achievement tests. Besides, their administration requires greater effort on the part of trainers. Moreover, they are time consuming too.

Several research studies have reported the use of achievement tests to assess content needs of teachers. Gupta (1996) assessed performance of primary teachers of Madhya Pradesh in mathematics and language (Hindi) using Mathematics Achievement Test (MAT) consisting of 40 items from five content areas of mathematics i.e. (i) whole numbers and numerals, (ii) addition, subtraction, multiplication and division, (iii) simple problems of daily life like relating to the units of money, length, mass, capacity, area and time, (iv) fraction, decimal, percentage and, (v) geometry, Hindi Achievement Test comprising 84 items out of which 40 items are on vocabulary control (antonyms and synonyms) and 44 are on comprehension (meaning of words, phrases/sentences, factual details, inference and central ideas/title). The study reported poor performance of teachers both in Hindi and Mathematics.

Gupta, Sharma and Bhattacharjee (1997) identified the training needs of 242 primary school teachers of five blocks located in three DPEP districts of Assam in languages and mathematics. The study revealed the following deficiencies of teachers.

Language: Spelling, opposite words, correct sentences, comprehension, punctuation, simple and complex sentences, letter writing, use of plural form in sentences, etc.

Mathematics: Place value, decimals, fractions and decimals, percentage, factors, multiples, LCM and HCF, even-odd, prime and other kinds of numbers.

Mohapatra (1997) used a content based diagnostic test for assessing the deficiencies of 131 primary school teachers teaching in Oriya medium schools. Health and hygiene, rotation of moon, functions of roots, stem and leaf, season and weather and work are a few of the hard spots which were identified in science (EVS-II) through the study.

In the present study an attempt has been made to assess the knowledge of primary school teachers of one block of Ghaziabad district of U.P. in four curricular areas, i.e. language (Hindi), mathematics and environmental studies I and II (social studies and science) with the help of comprehensive achievement tests specifically developed for the study.

Preparation of Achievement Tests

Four achievement tests were developed for primary school teachers in Hindi, mathematics, social studies and science. Tests were developed on the basis of content analysis of the latest textbooks prescribed for Classes III, IV and V by the U.P. government. Each test tried to cover almost all important concepts/themes/topics in the subject for Classes III, IV and V.

Each test contains a variety of test items depending on the nature of the subject e.g. multiple choice type, fill in the blank type, matching type, very short answer type, short answer type and drawing/construction of map/figure type. True-false type items were not included to minimize the scope of guessing.

The final achievement test in maths, Hindi, social studies and science has 60, 27, 95, 50 items respectively.

A total of 49 (39 male and 10 female) primary school teachers of Loni Block of Ghaziabad district wrote these tests. No time limit was fixed for completing a test therefore each teacher attempted the complete test. Difficult concepts/hard spots in each subject have been identified on the basis of the percentage of incorrect responses. Ideally all teachers must know all those concepts thoroughly which they are supposed to teach at primary level. If a concept is not attempted correctly even by 20–30 per cent of the teachers, it may be considered as difficult for them and it can be inferred that they require training to enrich their content knowledge. However, in the present study the cut-off point has been fixed arbitrarily at 50 per cent, i.e., an item which is not attempted correctly by 50 per cent or more of the teachers has been considered as difficult and the concept included in that item has been considered as a hard spot for teachers. S. Mohapatra (1997) and Gupta, Sharma and Bhattacharjee (1997) have also used the 50 per cent criterion to identify hard spots for primary teachers.

Sample Profile

Thirty-seven teachers out of the total sample of 49 teachers were in the age group of 50–60 years and 12 teachers were in the age group of 40–50 years. The reason for the concentration of teachers in the higher age group may

be due to a policy of the state government to assign Classes IV and V to head teachers only. Forty-eight teachers had teaching experience of more than 20 years and one teacher had less than 20 years of teaching experience.

Out of the total sample of 49 teachers, twenty-one teachers had high school qualification, 23 had intermediate certificate, four were graduates and one male teacher was a postgraduate.

All teachers included in the sample had studied Hindi at high school level, 23 teachers had also studied Hindi at the Intermediate level and four teachers had studied it at graduation level also. Forty-one teachers had studied mathematics up to high school level out of which 39 were male teachers, i.e. all male teachers had studied maths up to high school level. Previously mathematics was compulsory for boys at high school level in U.P. There was a choice for girls between mathematics and home science. None of the teachers had studied mathematics beyond high school level. Sixteen teachers (33 per cent) had studied science/ general science at high school level and only one teacher studied it at the Intermediate level and as many as 32 teachers (65 per cent) had not studied science even up to high school level. Nine teachers (18 per cent) had studied geography up to high school level and four teachers (8 per cent) up to Intermediate level. Nine teachers (18 per cent) had studied history at high school level, three (6 per cent) at Intermediate level and one at graduation level. All teachers were trained. Forty-eight

teachers had undergone BTC/HTC training and one had a B.Ed. degree.

Major Findings

Language (Hindi)

Fifty per cent and more teachers attempted five out of 27 items correctly in language (Hindi) achievement test. These items included items of reading, comprehension, spelling and explanation with reference to the context in poetry. Twenty-two items were wrongly attempted by more than 50 per cent teachers, the details of which are given below.

An overwhelming majority of teachers (80 per cent and more) failed to attempt correctly the items relating to the following.

- Identification of a word of different nature out of a group of given words.

- Identification of correct spelling.

- Differentiation between *sandhi* and *samas*.

- Compound and complex sentences.

- Identification of adjectives in a given paragraph.

- Awareness of *antah kathayen.*

- Providing title to a given paragraph.

More than 80 per cent teachers got either poor or unsatisfactory grades on the five-point sale in the essays written by them.

A large number of teachers (50 per cent to 80 per cent) could not attempt correctly the items relating to the following.

- Correct use of vowels and consonants (*varna*).

- Awareness about correct method of teaching poetry.

- Synonyms of given words.

- Construction of words. Construction of new words from given root words.

- Opposites of given words.

- Similar words having different meaning.

- *Sandhi vicheda* of given words

- Conjunct letters (*sanyukt akshar*).

- Identification of *viram chinha* (punctuation) in a paragraph.

- Providing a proper word for a phrase.

The teachers' knowledge of Hindi literature was found to be very limited. Besides, the teachers committed several mistakes while writing responses in the Hindi test. The common mistakes were of *matras*, use of similar consonants, incorrect sentences, punctuation, etc.

Mathematics

More than 50 per cent teachers correctly attempted items related to place value, writing numbers in words and words in numbers, small and big numbers, simple addition, subtraction and multiplication, addition and subtraction involving zero, unitary method, addition and subtraction of time, problem on money, simple division, profit and loss, volume and some problems related to

geometry, i.e. angles, triangles, rectangles, etc.

Seventy to ninety-five per cent teachers' responses were wrong in respect of the following concepts.

● Division by zero

● Multiples, common multiples

● Common factor

● Co-prime numbers

● Average of two/three numbers

● Identification of geometrical figures like cube and cuboid

● Identifying the number of plane and curved surfaces in geometrical figures.

● Defining a line segment

● Locating radius, diameter, chord and arc on a given circle.

Fifty to sixty-nine per cent teachers failed to attempt correctly items related to the following concepts.

— Sign of greater and smaller

— Multiplication of a number by zero

— Components of a division equation

— Fraction

— Prime and composite numbers

— Converting numbers into decimals

— Converting percentage into lowest fraction form

— Perimeter of a triangle

Social Studies

Out of ninety-five items, 16 items were attempted correctly by 50 per cent or more teachers. These include items on concept of globe, climate, soil erosion, soil formation, desert, agriculture and some items related to civics and Indian history.

More than 90 per cent of the teachers could not explain the following concepts/facts appropriately.

● Reasons for the difference in the width of Eastern and Western coastal plains

● Coral reef and great barrier reef

● Course of rivers in the Deccan Plateau region

● Reasons for abundance of black soil in the Deccan Plateau

● Delta formation in rivers

● Names of the rivers of Andhra Pradesh forming delta

● Name of the state rich in mica

● Difference between sea and ocean

● Difference between an island and a continent

● Strait

● Factors determining variation in the climate

● Reason for the difference in night temperature in plateau and plain regions

● Reasons for variation in natural vegetations

- Reasons for the presence of alpine forest in high mountains
- Effect of land forms of UP on agriculture
- Difference between rainfall pattern in Bombay and Pune
- Mineral required in the production of steel
- Explanation about the presence of a large part of China in a cool desert
- Reasons for concentration of most of the cities of Japan near the sea
- Why does Africa have desert towards western side.
- Main Mountain range of the USA
- Reasons for the presence of a majority of industrial areas of the USA in the north-east region
- Reasons for the concentration of population of Canada along its southern border
- Difference between forests of the USA and Canada
- Reasons for the concentration of Australian population in towns
- Similarities and differences in live stock of New Zealand and Argentina.

Nearly sixty to eighty-nine per cent of the teachers were not able to explain appropriately the following concepts/facts/principles.

- Difference between Longitude and Latitude
- Presence of a large number of iron/steel industries in Chota Nagpur region and cement factories in Madhya Pradesh and Rajasthan.
- Reasons for the concentration of Saudi Arabia population in the Western part of the country
- Presence of more industries in Western part of Russia
- Reason for the concentration of British population in South Africa.

Eighty to hundred per cent teachers were found deficient on items relating to map drawing/locating places on the map of UP, and India as given below.

- Drawing four cardinal directions and four intermediate directions on a map
- Identifying of lines of boundaries of a state, district and country on a map
- Locating dams/rivers/mountains on the map of UP
- Locating North-Eastern States on the map of India
- Locating plains on the map of India where temperature remains the same throughout the year.

Science

Out of fifty items of the achievement test in science thirteen items were attempted correctly by fifty per cent and more teachers. These included items related to the solar system, eclipses, germination of seeds, our food nutrients and characteristics of living and non-living things.

Fifty to seventy-one per cent teachers could not attempt the items related to the following concepts/facts.

- Role of plants in checking pollution
- Adaptation in plants (modification of leaves) and animals
- Function of kidney in our body
- Identification of component of oral rehydration solution (ORS)
- Components required in photosynthesis
- Difference between season and weather
- Factors determining the process of evaporation
- Process of crystallization
- Process of condensation and melting
- Definition of work
- Occurrence of day and night
- Process of shadow formation.

An overwhelming majority of teachers (80 to 99 per cent) wrongly attempted items related to the following concepts.

- Process of photosynthesis
- Process of respiration in plants
- Modified roots/stems/leaves
- Sensation of taste on different portions of our tongue
- Identification of joints present in different body organs
- Germination of seed
- Classification of animal (whale).
- Naming respiratory organs of whale

- Reasons for variations in weather in coastal areas (cool in summer and hot in winter)
- Process of melting and condensation
- Listing uses of solar energy
- Work
- Listing various forms of energy produced during the process of electricity production from coal in a thermal power station
- Identification of types of lever
- Drawing diagram of solar system.

Implications

- The findings of the study have revealed inadequacies in knowledge/ understanding of primary teachers in the content areas of four basic subjects which they have to teach i.e. language (Hindi), mathematics, social studies and science. Training inputs need to be provided in hard spots identified in each subject area to enrich subject knowledge of teachers.
- Teachers were found deficient in content knowledge of a subject irrespective of having studied it up to high school/intermediate or graduation level. Therefore, recurrent in-service training is required for teachers to upgrade their content knowledge related to prescribed curriculum.
- The possibilities of appointing subject specific teachers at the primary level have to be explored

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On the basis of the above analysis of four subjects the major concepts/themes which were found difficult by the sampled primary teachers may be summarized as follows.

Language [Hindi]	Mathematics	Social Studies	Science
A. Grammar • Script (*Lipi*) • Spelling (*Vartini*) • Matras Anusvar Anunasik Conjunct Words • Punctuation (*Viram Chinha*) Adjectives • *Sandhi, Sandhi-Vicheda* • *Samas* • Opposites • Root words • Construction of new words • Construction of sentences **B. Writing Skill** • Letter writing • Essay writing • Summarizing/giving title	• Symbol of greater and smaller • Multiplication and division involving zero • Fractions • Decimals • Multiples, prime, co-prime, composite numbers • Factors, common factor • Average • Geometrical shapes and structures • Identification of plane and curved surfaces in geometrical structures • Line segment • Perimeter • Circle	1. India- its land forms, mountains, plateau, northern plains, coastal plains, desert • Climate factors determining climate, variation in climate • Soil its formation, types and relationship with agriculture • Water resources relationship with land forms, activities of rivers • Minerals, metals and Industries 2. Uttar Pradesh its land features, climate, natural vegetation, forests, water resources, industries 3. Land forms, climate and life style in five continents • Difference between Sea and Ocean, Continent and Island, Latitude and Longitude 4. Map drawing/ locating places on the map	• Work, force, and energy • Climate, weather, season • Levers • Solar system, planets, satellites, stars • Occurrence of day and night • Shadow formation • Physical properties of matter melting, evaporation, condensation, crystallization • Classification and characteristics of plants and animals • Structure and functions of various parts of plants • Photosynthesis, respiration in plants • Adaptation in plants and animals • Our body, structure and functions • Our food nutrients • Joints in our skeleton system • Pollution

especially in case of geography and science. If appointment of subject specific teachers is not possible, then intensive curriculum enrichment courses in different subject areas may be made an integral part of all in service training programmes for primary teachers.

- The teaching of the entire primary school curriculum should be made mandatory in the preservice teacher education programmes.

- The possibilities of raising the academic qualifications of primary teachers need to be explored.

Problems and Intervention Strategies at the Lower Primary Stage in Varanasi District

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JUST after the attention-drawing statement of Nobel Laureatte, Amartya Sen, about the need of primary education, the sounds of drums and trumpets in the education sector have started refocussing on Primary Education (PE). But it is really depressing to go through the recent report of UNICEF 'State of the World Children' which states the following.

> *The policies framed in independent India have focussed on student enrolment and retention, but increasing demand has rendered them ineffective. This article throws light on whether timely identification of problems and implementation of intervention strategies have been fulfilled or not.*

.. India will be the most illiterate nation by the year 2000

..The total number of illiteates in India can be estimated to be some 500 million, that is more than the entire population of India in 1947.

(*The Hindustan Times*, 28-02-99, p.3)

Does it indicate that the constitutional provision under Article 45 for free and compulsory education for all children until they complete the age of 14 years, has been neglected by policy framers? Or, is it the geometrically exploding population which has made the post-Independence attempts futile? Or, have the emerging grassroot problems in PE been neglected from time to time? Or, have, the intervention strategies adopted to meet the problems remained ineffective?

The policies framed in independent India have focussed on stuent enrolment and retention, but increasing demand

has rendered them ineffective. As is evident from a report by Nagraj (1995) that, "... rate of illiteracy has reduced, the actual number of illiterates has increased due to an increase in total population" (*Pioneer*, 19.2.95). But at the same time we cannot feel satisfied with the same logic because lack of teachers, classrooms and other infrastructure related problems have emerged from time to time and have shown cumulative effects. In order to counter the different problems the governments in different states started the midday meal programme, the textbook distribution plan, etc. But have timely identification of problems and implementation of intervention strategies been done or not? It is a question worth studying. Thus the present study was undertaken, 'to find out the perception of school inspectors about problems and intervention strategies at lower primary stage in Varanasi District." Accordingly the objectives for this study were formulated as given below.

Objectives

The present study had the following objectives.

1. To find out the problems prevalent at the lower primary stage in Varanasi district.

2. To find out the severity of problems prevalent at the lower primary stage in Varanasi district.

3. To find out the intervention strategies, if any, being adopted to overcome the severe problems at the lower primary stage in Varanasi district.

4. To find out the future possible intervention strategies/policies which can be adopted to overcome the severe problems at the lower primary stage in Varanasi district

Methodology

This study was conducted between 20 December 1988 and 22 February 1999. The details of the tool used and the procedure of data collection technique are outlined below.

Tool

Two questionnaires were prepared to conduct this study.

1. In order to achieve the first and second objectives of this study 'Primary Education Problem Questionnaire' (PEPQ) was prepared. It consisted of 27 problem-related questions which were closed in nature. One question about other problems was open in nature.

2. In order to achieve the third and fourth objectives of this study, 'Primary Education Problem Solving Questionnaire' (PEPSQ) was prepared. It consisted of ten severe problems. Each problem had three sections, i e. (i)   present intervention strategy (by whom); (ii) its success; and (iii) future need for success/other possible strategy. It was an open questionnaire.

Population and Sample

The population for this study consisted of all the school inspectors involved with inspection of lower primary schools of Varanasi District. The perceptions of all the school inspectors were taken for this study.

Data Collection

The first questionnaire (PEPR) was administered on all the 16 school inspectors of Varanasi district between 20 December 1998 and 30 January 1999. Based on this the severity of the problems was worked out and a second questionnaire (PEPSQ) was prepared, which was administered on all the 16 school inspectors of Varanasi district between 4 February 1999 and 22 February 1999. The findings related to different objectives have been given below.

Findings

1. The findings related to the first and second objectives of the study mentioned according to the severity of the problems are given in the following table.

Sl. No.	Problem	Response as Yes	Severity Rank
1.	Lack of teachers	16 (100)*	I
2.	Involving teachers in miscellaneous work other than academics	15 (93.73)	III
3.	Lack of parent meetings	15 (93.75)	IV
4.	Lack of classrooms	14 (87 50)	V
5.	Lack of teaching-aids	11 (68.75)	VII
6	Net using teaching-aids	11 (68.75)	VIII
7.	Students not returning after midday meal interval	10 (62.50)	X
8.	Lack of interest by Village Education Committee	11 (68 75)	IX
9.	Lack of proper toilets	12 (75)	VI
10.	Gardening / Sports/Games problems	$\left\{ \begin{array}{l} 16\ (100) \\ 15\ (93.75) \end{array} \right\}$	II

* Numbers in parentheses indicate percentage.
  In this way the above ten problems were listed as major problems and based on their importance for education they were assigned severity ranks.

2. It was interesting to note that none of the schools had less than 40 students in Class I level. In most of the areas the number of primary schools was sufficient but it was not so in all the areas of Varanasi.

3. Several other problems perceived by Inspectors included lack of boundary wall in schools, lack of teaching–learning material, appointment of local teachers in school and negative interference by Gram Pradhan.

4. The findings related to the third objective of the study are as follows.

   (i) For lack of teachers no strategy is being adopted.

   (ii) No particular strategy is being adopted to keep teachers away from miscellaneous activities.

   (iii) No particular strategy is being adopted to arrange parent meetings.

   (iv) For construction of class-rooms World Bank funded projects are going on and the shool inspectors are of the opinion that it would be sufficient to overcome the problem of lack of class-rooms.

   (v) For meeting the problem of teaching aids every school is being facilitated by World Bank projects.

   (vi) To counter the problem of non-use of teaching aids by

teachers they are being trained and interest is being created so that they use them in future.

   (vii) To counter the problem of non-return of students after midday meal intervals, no particular strategy is being adopted.

   (viii) To create interest among Village Education Committee members, training is being imparted to them.

   (ix) Again, to counter the problem of bad toilets, a World Bank project is funding proper toilet facilities in schools.

   (x) There is no particular facility for gardening but sports and games activities are organized at the block level and students do participate in them. However, it seems that there is no proper arrange-ment for sports and games as a regular activity in schools.

5. Findings related to the fourth objective of the study are as follows.

   (i) For solving the problem of lack of teachers, the Government is planning to appoint teachers in the next academic session.

   (ii) As far as the problem of engaging teachers in miscellaneous activities is concerned the Government should avoid doing it.

However, some school inspectors were of the opinion that engaging them in some social activities is a must and cannot be avoided as it is a social obligation.

(iii) For arranging parent meetings at regular intervals, the Headmaster, teachers as well as the village community should show interest. Similarly, the Village Education Committee members should also show interest.

(iv) To counter the problem of non-availability and non-use of teaching aids there is need of teacher's awareness and regular inspection by concerned authorities.

(v) Some students don't turn up after lunch, so the Government should launch a programme to attract them, like providing refreshment in shools. Besides this, parents should also be made aware of this problem and pay attention on their wards.

(vi) For solving the problem of gardening and sports and games activities, special efforts should be made jointly by the Headmaster, teachers and the village community. Besides this, the Government should pay special attention to it and a games teacher should be appointed in every school.

Implications of the Findings for School Effectiveness

1. The findings of this study reveal that even in the age-old educational capital of India, education at the lower primary stage is in the clutch of several problems. The most important among them is lack of teachers. Although it is expected that the Government will start fulfilling this demand during the next session, we cannot be sure of it unless it is done. On the other hand, to what extent any government or international funding agency can tackle this problem in relation to the growing demand is also a question of introspection. Hence, what can be done is implementing the age-old *monitorial system* to tackel the problem of lack of teachers.

2. Problems like lack of parent meetings, lack of interest of Village Education Committees; students not returning after midday meals, may be categorized under *the problems of lack of awareness among the masses*, hence programmes for *awareness for community participation* should be launched. Only then can effective outcomes be experienced at the base of the educational pyramid.

3. Problems like teachers not using teaching aids even when the World Bank has provided funds for

teaching aids indicates negligence of teachers towards their basic duties. Training programmes have been launched for them and, hence, proper inspection of schools is needed.

4. No school can give proper education to students without conducting gardening, sports and games activites in schools. These are the most neglected activities in schools. It can be solved only when the village community and school teachers act in coordination and proper vigilance is done by school inspectors. Traditional games should be encouraged at this level.

5. Another implication can be regarding involvement of teachers in miscellaenous activities other than academics. It is really unfortunate that the basic work for which they are paid is not done by them because policy planners interfere and extract other work from them.

6. The last implication can be construction of school boundary walls. It could be a brick wall or hedging. Another implication could be providing teaching-learning materials to students through the school library. A pertinent suggestion for school effectiveness can be appointing teachers away from their home town.

The present study reveals that lower primary schools in Varanasi District are facing several problems which may hamper the quality of education in these schools. Although efforts by Government and World Bank funded projects have helped a lot to counter several problems, a lot needs to be done by the local community, teachers and related authorities. Unless a joint effort is made by every one concerned, nothing fruitful can be done for upgrading the quality of education at the school level in general and for universalization of primary education in the District of Varanasi in particular.

The Impact of Games on Learning of Addition in Mathematics

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Mathematics is the science of measurement, quantity and magnitude. It is the numerical and calculation part of man's life and knowledge. It helps man to give exact interpretation to his ideas and conclusions. It deals with quantitative facts and relationships as well as with problems involving space and form. It also deals with relationship between magnitudes. It enables man to study various phenomena in space and establish various relationships among them. It is also called the science of logical reasoning. In it, we approach everything with a question mark in our mind;

the results are developed through a process of reasoning.

The importance of mathematics in day-to-day life and as a school subject is undisputed. Today's children are tomorrow's citizens. As a child, he/she should learn mathematics, so that as a citizen he/she can be successful in his/her daily activities.

The objective of the study was to teach the addition unit in mathematics to pupils through games and find out its effect on academic achievement. The sample for the study consisted of 29 boys and 39 girls studying in Class II. Pre-test–post-test single group design was followed for the study. There was much improvement in the academic achievement of the pupils in mathematics while learning through addition games, and there was no gender difference.

Objectives

The main objectives were

1. To find out the level of achievement of the pupils in mathematics, in the addition unit.

2. To teach the addition unit in mathematics to the pupils through addition games.

3. To find out the level of achievement of the pupils in mathematics, in the addition unit, after teaching through addition games.

4. To compare the pre-test and post-test levels of achievement of the pupils in mathematics.

Action Hypothesis

The academic achievement of the pupils in the addition unit in mathematics, will improve when they learn through addition games.

Sample

The sample consisted of 29 boys and 39 girls studying in Class II in the Municipal Primary School, Sandaipettai.

Tools Used

Two achievement test papers in mathematics—one for pre-test and the other for post-test were used. An achievement test paper to measure the academic achievement level of the pupils in mathematics was prepared by the researcher. The content area was restricted to the addition unit. The competencies prescribed for Class II pupils in the addition unit are given below.

(i) Adds numbers 0–18 mentally with their sum not exceeding 18.

(ii) Adds two or three two-digit numbers

without carrying and their sum not exceeding 99.

The following types of questions were selected based on the above competencies

S.No.	Question Type	No. of Questions	Marks
I.	Multiple choice	5	5
II.	Fill in the blanks	5	5
III.	True or false	5	5
IV.	Matching type	5	5
V	Life oriented	5	5
	TOTAL	25	25

In all, there were 25 questions in the test paper. The maximum marks a pupil can score is 25 and the minimum is 0.

Two question papers of equal standard were prepared: for pre-test and the other for post-test.

Methodology

The pupils were tested using the question paper prepared, in the beginning (pre-test). Their answer sheets were collected and valued according to the scoring key.

The addition games suggested in *Issues in Primary Education* (Volume 1, Number 4, March 1999) were used for the work. The pupils were divided into groups of two, three and four, according to the requirement of the game. Each group was given a chance to play all the instruction regarding the rules of the games. While the pupils played the games, the teacher went round the class and helped the pupils with difficulties, if any.

The pupils learned mathematics through addition games for a period of one month. At the end of one month, the pupils were once again tested (post-test).

The marks obtained by the pupils in the pre-test and post-test were subjected to statistical analysis.

Statistical Analysis and Interpretation

The performance of the pupils in the pre-test and in the post-test was compared. The class average of the boys and the girls in the pre-test and post-test was calculated (Table 1).

TABLE 1
Performance of Pupils in Pre-test and Post-test

Sex	N	Pre-test Average	Post-test Average	Mean Gain
Boys	29	38 76	50.89	12.13
Girls	39	39 18	54.67	15.49
TOTAL	68	39	53.06	14.06

The table clearly shows that the average of the boys has increased from 38.76 per cent in the pre-test to 50.89 per cent in the post-test; and that of the girls has increased from 39.18 per cent in the pre-test to 54.67 per cent in the post-test. The class average has increased from 39 per cent to 53.06 per cent. The mean gain in the case of boys is 12.13, and in the case of girls 15.49, and for the whole class it is 14.06; which shows that there is substantial improvement in the case of both boys

and girls. This further shows that learning mathematics through addition games improves the academic achievement of pupils.

Statistical Hypothesis: There is no significant difference between the boys and girls in their performance in the post-test.

Means and standard deviation were calculated from the post-test scores and t-test was applied to verify the hypothesis.

TABLE 2
Means, S.D.s and t-value for the Post-test Scores

Sex	N	M	SD	t-value
Boys	29	50.89	20.95	0.79
Girls	39	54.67	16.98	

The t-value calculated was less than the theoretical value at 0.05 level. Hence the null hypothesis was accepted at 0.05 level of significance.

There is no significant difference between the boys and girls in the post-test scores.

This shows that both the boys and girls have performed equally in spite of the fact that the mean value of the girls is higher than that of the boys.

This further shows that both the boys and girls have benefitted equally through this work.

Statistical Hypothesis: There is no significant difference between the pre-test and post-test scores of the pupils.

TABLE 3
Means, S.D.s and t-value for the Pre-test and Post-test Scores

Test	N	M	SD	t-value
Pre-test	68	39	3.36	
				28.12
Post-test	68	53.06	2.53	

Since the t-value obtained was greater than the table value at 0.05 level of singificance, the null hypothesis was rejected.

The higher mean value in the post-test showed that the performance of the pupils in the post-test was better than that in the pre-test.

This shows that addition games have helped the pupils to learn mathematics better. The academic achievement of the pupils has improved better than at the initial level. This further shows that learning through addition games is a better and easier way of learning mathematics.

This research work clearly shows that by learning mathematics through addition games, improvement in the academic achievement and in the understanding of mathematics of the pupils can be effected.

The research work further shows that there is no gender difference; both, the boys and the girls have benefitted equally by learning mathematics through addition games.

Role Perception of Tribal Teachers at the Primary Level

A Study

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Many psychologists believe that the way in which the individual perceives himself is the most important factor in his personality structure. One important dimension of self concept is self esteem, the degree to which one perceives oneself as worthy or unworthy. The degree of self esteem that he/she possesses goes far in determining how he/she will behave in various circumstances, what his/her level of aspiration will be, what happiness and contentment he/she will enjoy in the course of his/her life.

> *Many psychologists believe that the way in which the individual perceives himself is the most important factor in his personality structure. One important dimension of self concept is self esteem, the degree to which one perceives himself as worthy or unworthy. One's self concept is a function of one's total experience, not just that of one's experience in school, and goes beyond the limits of the school setting. A teacher with a strong self concept may influence others.*

The way in which an individual conceives of himself is highly complicated. One's self concept is a function of one's total experience, not just that of one's experience in school. A teacher with a strong self concept may influence others so that they tend to rate him/her as he/she rates himself/herself.

Meaning of the Role Perception of Teachers

The concept of role perception of teachers has a wide meaning as it includes many attributes of which some are teacher's views and

attitudes, teacher-student relationship, interest in teaching method, etc. The role perception indicates how training influences a teacher's profession as a whole. The difference which he/she finds before and after training. What does the teacher understand his/her duty to be? Only to teach? Only to provide information? Only to influence students? Or to do something beyond these activities? In the broadest sense of the term it includes all the new ideas and thinking which he/she derives out of his/her training, the new method of teaching, the renewed way of motivation and the interest that a teacher shows to his/her duty imbued by training.

Teaching vs Other Professions

The various occupations of the civilian labour force of India are classified, defined and briefly described by the National Classification of Occupations (NCO). For the purpose of this classification it has been considered that, "Occupation is trade, profession or type of work performed by an individual, independent of the worker's industry, status or years of experience."

Though teaching is regarded as a profession in India there may be many who may not accept school teaching (particularly middle, primary, nursery and kindergarten teaching) as a profession, for it does not at present fulfil a new distinguishing qualities which are the mark of any occupation which may be called a profession.

When teaching is considered in the light of the above criteria it may be frankly admitted that it cannot achieve professional level. In the past, many less motivated people entered the teaching profession with very little preparation, but today a teaching group is a composition of persons with varying amounts of educational preparation. No occupation can be rated as high as teaching because its social value lies in its great contribution to the betterment of living which ultimately leads to the betterment of society.

Code of Ethics

A code of ethics is one of the basic characteristics of all professions The formulation and the enforcement of a code of ethics enhances the power of the teacher by giving him/her professional rights and privileges which can be enjoyed only when he/she executes his/her professional work with moral responsibility.

An individual teacher can contribute a great deal in upgrading the teaching profession by becoming an active member of the local association and by increasing his/her participation in community affairs and maintaining the standards and ethics of his/her profession. Positive social attitudes towards the teaching profession act as an incentive for better professional achievement. But a high degree of recognition, prestige and social status cannot be attained by a profession unless the profession exerts itself to attain these desired objectives.

Inservice Education

The training of a teacher and his professional development is a continuous process that takes place partly in a teacher training institute before an individual enters the teaching profession and partly when he is serving as a teacher. Inservice training of a teacher on a continuous basis is considered as both complementary and supplementary to the normal preservice programme.

There is growing recognition among educators for vigorous, continuing education of teachers serving in the primary level. Changes in curricula, school organization and administration, programmes and activities in schools are taking place continuously. Several new services are added. Introduction of cumulative records, provision of audiovisual and guidance services, introduction of social studies and general education programmes, teaching of English through the structural approach, introduction of practical subjects are all changes which have been introduced in school programmes during the last few years. For many teachers, these new developments have no significance unless they are clarified for understanding and adoption through a systematic programme of inservice education.

Purpose of the Study

Role perception is counted an important factor as a whole personality of an individual. What is the role of a teacher in the society ? Does he consider his work 'worthy enough'? What is his attitude towards his life? The social framework, where the role is to be played, is also equally important. The tribal society with a distinct folk culture will influence the teacher in a differentiated manner. The unique feature of the tribal society taken in this study is that it is matrilineal where the role perception of teachers may be somewhat different from others. After all, to know the teacher's own views regarding his/her profession is the main purpose of the present study.

Objectives

Main Objectives

A comparative study between trained and untrained teachers of the tribal community at the primary level

Sub-objectives

1. To know the importance of training at the primary level

2. To analyze the status of the teaching profession at the primary level

3. To know the teacher–student relationship and the teaching method of primary teachers.

Hypotheses

1. It is assumed that teacher education (training) has impact on the attitudes of teachers.

2. It is also assumed that teacher education helps teachers in their professional growth.

3 It is further assumed that teacher education improves the extent of relationship between teacher and students.

Methodology of the Study

The methodology adopted to carry out the study are,

1. Questionnaire

2. Interview

3. Field study

Tools used: Questionnaire related to attributes of the role perception of primary teachers.

Locale of the Study

Meghalaya means 'the abode of clouds' and at the same time it is known as the 'Scotland of the East'. It consists of seven districts. Jaintia Hills is one of the districts. Jowai is the district headquarters of Jaintia Hills. Nongbah is one of the oldest villages 12 km. away from Jowai.

The traditional matriarchal social system prevails here where property is inherited through females. Women play a dominant role in society. As per the 1991 Census the population of this village was 3,678. Among them 1779 were males and 1899 females. It is predominantly an agricultural village. The first primary school of this village was set up in the year 1895 by the Welsh Presbyterian Mission and gradually many other schools were set up. At present there are 30 lower primary, three upper primary and a high school which provide education to the people and enhance the overall literacy rate of Meghalaya which is 49 10 per cent (male 53.12 per cent and female 44.85 per cent), according to the latest total literacy campaign launched by the Government of India.

Table 1 shows that there are altogether 13 schools at Nongbah. Among them eight are government schools, two are government aided and three are private schools. Again, against 30 trained teachers there are six untrained teachers and their respective percentages are 83.3 per cent and 16. 7 per cent whereas in the government aided schools the percentages are 25 and 75 respectively. But it is strange to note that cent per cent teachers are untrained in the private schools of the village. It is a matter of great concern in the present

TABLE 1
Distribution of Trained and Untrained Teachers in Different Schools

	Govt	*Govt. aided*	*Private*	*Total*
Schools	8	2	3	13
Trained	30 (83 3%)	3 (25%)		33
Untrained	6 (16.7%)	9 (75%)	10 (100%)	25

Role Perception of Tribal Teachers at the Primary Level

educational scenario. The qualifications of teachers are shown in the following pie-chart.

QUALIFICATIONS OF TEACHERS

HSLC/Matric (20%)   Below HSLC (25%)
124   155 16

PU/HS (5%)   30 90   49 68
   B A /B.Sc (8%)

Analysis and Interpretation

Keeping in view the various objectives of the study the available data have been analyzed.

It is found from Table 2 that the number of untrained teachers are less in comparison to trained teachers. Yet the performance of the primary school students are not up to the mark and so we notice the high drop-out rates and stagnation at the primary level. The reason may be that trained teachers did not get the required equipment to draw the attention of the students, or it may be because they did not practise the techniques they learnt in the training institutes. Hence, we cannot hope for universalization of free and compulsory education even after the 52 years of independence. The number of trained and untrained teachers and their respective percentages have been shown in the following figure.

33 → Trained (57%)
25 → Untrained (43%)

Trained and Untrained Teachers and Their Respective Percentages

TABLE 2

Distribution of Trained and Untrained, Male and Female Teachers

	Trained	Untrained	Male	Female
1	4	1	–	5
2	5	1	–	6
3	4	–	–	4
4	3	2	1	4
5	5	1	–	6
6	3	–	–	3
7	4	–	1	3
8	3	4	1	6
9	–	5	1	4
10	2	1	–	3
11	–	4	–	4
12	–	4	–	4
13	–	2	–	2
TOTAL	33	25	4	54

From the responses made by the primary school teachers regarding the importance of teacher education (training), it has been noticed that out of 49 teachers 33 (67.35 per cent) teachers have said that the teacher training is important for better teaching or to improve the teaching method. Two teachers have said that the training has no importance because there are some untrained teachers who can teach better than the trained ones. Again, 14 teachers did not give any response to this question. Therefore, it is a vital question whether training is really essential for effective teaching, and if it fails where does the lacuna lie? As a very large number of teachers considered that teacher training was necessary and helpful, we may conclude that to be an effective and ideal teacher training is necessary.

Again, most of the teachers (97.96 per cent) considered the students as their own children so it may be said that they are concerned about an ideal society which is an inherent idea of teacher's mind for which they always try to make such relationship with them.

When asked about the teaching method, 48 out of 49 teachers (97.96 per cent) responded positively. Moreover, they said that they adopted the question–answer method. The percentage of teachers who claimed to use the blackboard in the classroom was 97.96. They also used teaching aids in class.

So it may be said that through the teaching aids, such as blackboard, map,

models, pictures, drawing, textbooks, etc. teachers conveniently communicate with the students of primary level and motivate them. The inquisitiveness of the students are met through interaction.

The responses to questions about the teaching profession are mostly positive that teaching is a respected profession (91.84 per cent), and it is an ideal job as well (97.96% per cent). So it may be said that teachers are partly or wholly involved in the upliftment of society and are socially recognized and respected.

(N.B The questionnaires were given to 58 teachers of 13 schools, but response was available only from 49 teachers and on the basis of the available response data have been analyzed.)

Major Findings and Conclusion

The present study has been carried out with the aim to study the role perception of tribal teachers at the primary level. If a teacher understands his/her role properly, he/she can do his/her duty more effectively and actively than others.

1. It is revealed that 97.96 per cent of teachers use blackboard at the primary level.

2. 97.96 per cent teachers are of the opinion that teaching is an ideal job

3. 85.71 per cent of teachers pay attention to students' problems.

4. 97.96 per cent teachers are of the opinion that students like questioning.

5. 89.80 per cent tribal teachers at the primary level can read and

write two languages.

6. 91.84 per cent teachers are of the opinion that as teachers they are more respected in society.

7. 89.18 per cent teachers are of the opinion that they did not feel irritated if the students asked them illogical questions.

8. 73.47 per cent teachers said that they were associated with teachers' associations.

9. 51.02 per cent teachers keep track of current affairs by reading newspapers, 8.16 per cent by watching T.V., 4.08 per cent through the radio and 2.04 per cent by communicating with others.

10. 100 per cent teachers are of the opinion that there is a difference between trained and untrained teachers.

11. 67.35 per cent teachers said that they were interested in training as it

helped them to teach in a better way.

12. 42.86 per cent teachers said that they would leave the profession if they got any other job with a higher salary, whereas 44.90 per cent teachers were of the opinion that they would not leave this profession even if they got a better job, considering its social respect and recognition.

The role perception of tribal teachers at the primary level makes him/her aware of his/her attitudes, technique and position in the arena of a school as well as in society. It is to be stimulated by pedagogical research and made intellectually richer and more challenging. Further it needs to be extended far beyond professional renewal and career development of all teachers keeping in mind that education is the basis of economic upliftment of a society. Only then will the dream of a global village and a uniform world get a real shape.

Cooperative Learning

Alternative to Conventional Teaching

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SINCE the number of learners in traditional classrooms is large, the teaching-learning process will have marked limitations to attain the specified objectives of learning. Instruction in a large group seems to be a challenge to the teacher because students have diverse academic and non-academic interests, abilities and goals that may clash with the objectives of the teaching. The type of interaction in a traditional classroom is always characterized by competition. In such a classroom context the interpersonal interaction is very low and projected with mutual dislike rather than liking and mutual trust. The support among learners and the emotional involvement is minimum.

> *Principles of cooperation have been applied for many years in industry, in the military sports and in other human endeavours. They have also been used in education for a long time, but their use has tended to be occasional and informal.*

Coordination of learners' efforts and division of labour is not possible normally. To overcome these limitations of traditional instruction, investigators like Johnson and Johnson (1997), Stevens and Slavin (1995), Lumpe and Staver (1995), Brush (1996), Grambo (1997), Petty (1997), and Shaw (1997) thought of an alternative strategy, 'cooperative learning'.

Cooperative Learning: The Concept

The concept of cooperative learning refers to instructional methods and techniques in which students work in small groups (four to six members) and are rewarded in some way for performance as a group. Many studies in western

countries revealed that using cooperative learning as an instructional strategy, teachers can overcome the major difficulties that arise while using the conventional method of teaching. The cooperative learning strategy is based on the psychology of cooperation and competition among students in the class. In cooperative learning, students are to work together for a common goal, motivating themselves by depending on others, encouraging each other during the task of learning and by increasing positive contact among group members.

Principles of cooperation have been applied for many years in industry, in the military, sports and in other human endeavours. They have also been used in education for a long time, but their use has tended to be occasional and informal. Systematic Cooperative Learning programmes used as the principal means of delivering instructions were developed in the early 1970s. The rationale for this new emphasis was on cooperation among the students in the classroom and a profound dissatisfaction with the traditional instructional system. Cooperative learning methods have improved group relations in desegregated classrooms, acceptance of academically mainstreamed handi-capped students by their classmates, development of student self esteem and other affective outcomes.

The Basic Theory

The theory on which cooperative learning methods are based is quite old and well established in social psychology. There is a basic relationship between cooperation and social perspective of the individual which has a great deal of social psychological basis. Cooperation was evidently the most valuable form of behaviour for man taken at any stage of his evolutionary history. Society is fundamentally, always in a cooperative enterprise designed to keep human beings in touch with one another. Aggressiveness exists in the nature of human beings, but there is also a healthy non-ruthless competition and there exists very strong drives towards social and cooperative behaviour.

The Process

In a classroom, interaction among students involves three potential types of inter-dependence—Cooperative, Competitive and Individualistic. In traditional classrooms, students typically have responsibility only for themselves, are not allowed to help one another and must compete for grades Cooperative learning approaches to instruction have altered these conditions. In a cooperative structure, as one pupil achieves others automatically achieve also. In a cooperative goal structure, students work together to produce a common product. There are three reasons why a cooperative goal structure is valuable for classroom teaching.

1. Cooperative goal structures are easier to set up, monitor and evaluated in terms of teaching time and effort

2. Cooperative goal structure promotes helping and sharing among students.

3. Cooperation promotes the type of learning climate and the cognitive and affective outcomes that make teaching more effective and more functional.

Cooperative learning enables both the students and the teacher to take on new roles within the classroom. It builds upon a variety of social skills and provides an opportunity for both groups and individual assessment. It also allows students to reflect upon themselves and their groups. Through evaluation students are able to go back to their groups and discuss the positive and negative aspects of their experience. When this structure is implemented in the classroom, the teachers must take care of the following aspects.

(i) Presentation of the goal as a group goal

(ii) Encouraging and sharing the ideas and materials

(iii) Encouraging the division of labour

(iv) Rewarding the group for successful completion of the task.

An overview of some of the cooperative learning procedures follow.

A. Learning Together (LT)

This method possesses four basic elements. They are (i) positive interdependence, (ii) face-to-face interaction among group members, (iii) individual accountability for mastering assigned material,

and (iv) instruction of students' appropriate interpersonal and small group skills.

B. Jigsaw I (JII)

In this method each group member possesses unique information and thus has a unique role to play. The group product cannot be completed unless each member does his or her part.

C. Group Investigation (GI)

In this method students work together using cooperative inquiry, group discussion and cooperative planning and projects. They select the topics and break them into individual tasks and eventually the group makes a presentation or display to communicate its findings to the class and is evaluated on the basis of the quality of its report.

D. Team Games Tournament (TGT)

In TGT the teacher presents the material to be learned, team members work together to study from worksheets by discussing the material and tutoring and quizzing. Students are assigned to three-person tables composed to students from different teams who are similar in achievement. The three students at each table compete at academic games covering the content taught that week.

E. Student Teams Achievement Division (STAD)

It uses the heterogeneous grouping and cooperative learning procedure with a quiz. Quiz scores are translated into team competition points based on how individual students' scores compare with

the scores of other students in their achievement and individual points are combined to yield team totals.

F. Jigsaw II (J II)

In this method the teacher does not need to provide each student with unique materials. Instead all students begin by reading a common narrative but each student in the group is given a separate topic on which to become an expert.

G. Team Assisted Individualization (TAI)

In TAI, students work cooperatively in pairs within their teams by tutoring, quizzing and otherwise helping one another to master individually assigned content.

H. Cooperative Integrated Reading and Composition (CIRC)

In this programme students work in four-member cooperative learning teams. The teams contain two pairs of students from the different reading groups. Rather than working on workbooks during follow-up time, students engage in a series of activities with one another.

I. Turn to Your Neighbourhood (TN)

Students pair up with other students to discuss an idea, to write or to draw as instructed by the teacher. They may be asked to share their work with the class.

J. Pairs of Pairs (PP)

Students write out a list of responses to a question or statement such as all the states and their capitals. They first work in pairs and make one list. Two pairs then get together and make a single combined list. All the members of the group are responsible to know what is on the list.

K. Numbered Heads Together (NHT)

The teacher has students numbered off within groups, so that each student has a number — 1, 2, 3, 4 or 5. The teacher asks a question. Students "put their heads together" to make sure that everyone on the team knows the answer. The teacher calls a number (1, 2, 3, 4 or 5) and students with that number can raise their hand to respond

L. Inside-Outside Circle (IOC)

Students stand in pairs in two concentric circles. The inside circle faces out, the outside circle faces in. Students respond to the teacher's questions as they rotate to a new partner.

Try to be Innovative

All these cooperative learning methods proved effective in the actual classroom set up. Teachers who have innovative and experimental mentality, can practise these methods in their classrooms. What is essentially needed is commitment on the part of teachers and some amount of freedom given to them to make appropriate changes in the existing classroom environment

Recording and Reporting System
Primary Schools of Andhra Pradesh

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To our surprise, by a simple action research it was noticed that though most of the teachers handling Classes I to V were experts in transacting the content in the classrooms by using suitable teaching-learning strategies and the use of teaching-learning material, they failed in recording and reporting children's performance. Teachers always tend to measure the performance using evaluation tools like tests and examinations as frequently as possible, neglecting the measurement of all-round development as envisaged in NPE '86 and POA '92 giving 40 per cent preference to cognitive domain and 60 per cent preference to non-cognitive domain.

Teachers always tend to measure the performance of students using evaluation tools like tests and examinations and as frequetly as possible, neglecting the measurement of all round development as envisaged in NPE'86 and POA'92 giving only 40 per cent preference to the cognitive domain and 60 per cent preference to the non-cognitive domain.

Only 20 per cent of the primary schools in Andhra Pradesh have recording and reporting systems for core curricular subjects, language, mathematics and environmental studies, in the form of marks registers and progress cards for one year. Teachers did not have any idea about the measure ment of perfor-mance of children in para curricular activities. There are no evidences of children's performance continuously from Class I to V if we want documentary evidence about the children's performance in primary schools. The yearly progress card is the only recording and reporting evidence of children who studied

continuously for five years in a primary school. At times it may happen that children have to attend more than one school for the completion of primary education.

Information about primary education that is not available completely serves no purpose at all. Well-defined recording and reporting system about the children's performance will be very useful in the form of documentary evidence for future guidance. Educational administrators, supervisors, academicians should insist more on the effective implementation of a well-defined recording and reporting system in primary schools for the benefit of the children as well as for future guidance.

A suggested five-year progress card (cumulative record card) is annexed (page 73) for effective evaluation of primary education in India. This suggested cumulative record card is a threefold N-shaped card having two sides. The front side is for recording performance in the cognitive domain and the reverse side for performance in the non-cognitive area. Each fold is reserved for recordings related to two classes continuously from Class I to V. In the cognitive domain the performance is recorded in grades/percentages tool-wise. In the case of non-cognitive domain the performance of a child is recorded month-wise and item-wise in percentages. A suggested model five-year progress card is annexed (page 74) for use in primary schools irrespective of area and management of the schools.

Admission No

Suggested Cumulative Record Card

Five Years' Progress Card
(For Primary School Children)
Kurnool District, Andhra Pradesh

To be implemented from 2000-2001

Academic Year: *Blood Group:*

Name of Student: *Telephone No:*

Name of Parents:

Date of Birth :

Community/Caste:

Native Place/Address:

Class in which Admitted and Date of admission:

S. No. All -round Development Measurement in	Achievement Levels in % Oral Test 1 2 3 4 5 6	Assignments 1 2 3 4 5 6 7 8	Class I ------> Unit Tests 1 2 3 4 5 6	Q 2	H 1	A 1	Total 24
Cognitive domain (40%)							
1. Telugu (Language)							
2. Mathematics							
3. Environmental Studies-I							
4 Environmental Studies - II							
5. English							
6. Hindi							
7. Other subjects, if any							
TOTAL							

Suggested Cumulative Record Card
Five Years' Progress Card

Non-Cognitive Area (60%)-Jun/July/Aug/Sep/Oct/Nov/Dec/Jan/Feb/Mar/ Apr—Total

I	Games	Class I	Class II	Class III	Class IV	Class V
	• Sports					
	• Physical Exercises					
	• Work Experience					
	• Art Education					
	• Health Education					
	• T.L.M. and Classroom					
	• Skills Development					
II.	*Participation in Social Service*					
	Excursion,					
	Field trips, Exhibition					
	Cub and Bulbuls					
	School Prayers					
	Cultural Activities					
	(Drama, Dance, Elocution)					
III.	*Spiritual Events*					
	Moral Education					
	Religious prayers					
	Visits					
	Merit awards					
IV.	*Personal Hygiene*					
	Height					
	Weight					
	Eye sight					
	Common ailments					
	Record of chronic diseases					
	Prescription, medicines used					
	Other information: Attendance					
	GRAND TOTAL ·					

NCERT

EDUCATIONAL
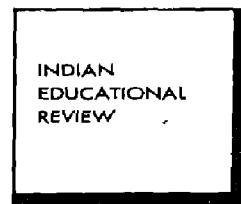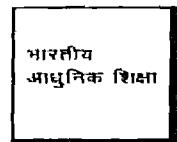
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TO OUR CONTRIBUTORS

Articles in duplicate are invited for publication from
research scholars, educationists, teacher-educators,
teachers and students These should be typed in double
space on one side of the sheet

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A Wired
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Editorial

TECHNOLOGY has become an important component of education in this age of information technology. Students and teachers must respond to the technological changes positively and enhance the efficacy of all aspects of their life. Our schools have to be smarter and brighter. The old, stereotyped teaching has to be replaced and enriched by new technological devices like the computer.

In the cover of *The Primary Teacher*, July 2000, Dr Rajaram S. Sharma had depicted a 'teacher in a web'. A Dream was offered as a means to liberate the teacher. In this issue we have the Dream much closer, within reach perhaps, and the prospects of liberation appear that much brighter. Due to various innovations and discoveries there has been an explosion of knowledge. There is need for continuous upgradation and modification of teaching strategies incorporating various concepts, devices and professional cues.

A teacher should enrich his/her teaching with the help of devices like art, music, drama, to make the learning easier, effective, enjoyable and interesting. Expertise is the demand of the hour. Teachers have to be accountable for the progress and development of children. For this the school should instil a sense of discipline in students as well as teachers, not by stick and hammer, but by a change in attitude and an overall approach of understanding a problem. Apart from this, there needs to be a review of the content. Our syllabus must be responsive and in keeping with the changes which are desirable in society.

But educational development/success is incomplete without equal participation of all sections of the society — man and woman, poor and rich, rural and urban — in the educational process. Every effort should be made to make education accessible and effective regardless of caste, creed, colour, class, region or gender.

Above all, a child is an individual. He/she should have full freedom to ramble in his/her dreamland, explore the world in his/her own way. Our task is to help the child by providing a conducive atmosphere — in school, at home and in society — so that he/she can bloom.

USHA DUTTA
Academic Editor

The Teacher in a Web – 2

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Technology in education has seen many successes. But, except for the blackboard perhaps, no technology was exclusively developed keeping education in mind. It is the ingenuity of teachers who saw great potential in various technologies and adopted them to their advantage. Be it the simple postal technology or the more popular broadcast modes, the teachers soon appreciated their utility in improving their own performance and thereby bringing about a richer learning experience for their pupils.

Have you ever wondered what exactly the role of technology is in education? What purposes should it serve? What must one expect technology to deliver?

> 'The Teacher in a Web' is a series of articles exploring technology and its uses in education. In this part we simultaneously take a tour of the field of computer and trace the educational uses people have envisaged for it. We trace the maturation of the clumsy desktop machine into an interactive multimedia adventure which opens out immense possibilities for the teacher and the classroom. At the same time the technology has its critics too. What do they have to say? Why are they critical? We examine how this powerful medium can be channelized to support the teacher. We further trace the 'wiring of the world'. We explore some of the possibilities that the networked world of computers, the internet, has for the classroom teacher. We argue that till date this technology has shown the best promise of a very constructive support system for school education.

Experience shows that technology is meant to help us excel in whatever we are doing, improve our efficiency, even make our life easier perhaps. In the words of Anatole France, "The whole art of teaching is only the art of awakening the natural curiosity of young minds for the purpose of satisfying it afterwards." Going a little further, we aim at enabling all children acquire the necessary level of competence in gathering, processing and managing information. Any technology, therefore, should be measured in terms of how much it contributes to this venture. Also, each technology brings with it, its own unique set of conditions under which it can contribute best. While the post depends on the efficiency of the postman, the newspaper may not provide information, which directly fits into our requirement. The radio and television not only use relatively complex hardware, but are also affected by the vagaries of the electric supply. Like the newspaper, their programmes may, at best, be so ehow connected to the lesson we are handling. Naturally, embracing technology in education has not been spontaneous. But can we disregard it? As we showed in the first part of 'The Teacher in a Web,' each of the technologies discussed brings with it some unique benefits, which may make it quite worthwhile.

None of the technologies we have seen have even attempted to help a teacher out in one of the most time consuming activites she/he has to indulge in—evaluation. Keeping track of teaching, finding out how much our pupils have progressed and finding ways and means to take them that little distance forward, is many a time quite a task. Would it not be great if technology could also remove some of our miseries in this area too? So, while we want the ideal technology, we called it *Dream*, remember, to become the handyman for all our resource needs, we also want it to take on some of the mundane chores we perform.

Computers or PCs (personal computers) appear to be the more likely candidate for our *Dream* machine. Let us spend a few moments off the track and look at what computers are all about. Computers, as the name suggests, were initially intended to compute, that is handle numbers, perform mathematical operations and churn out results in a remarkably short time. The salient features of computers therefore included speed of computations, reliability of results and ability to work continuously for long stretches of time. Soon the computers changed their profile from just a number crunching machine to something that could handle text. The first word processor was born. It became possible to handle large quantities of text and store, juggle and re-purpose them electronically. The importance of this to the teachers cannot be over-emphasized She/he could now become a content creator capable of organizing material and data. Electronic data and text allowed the teacher not only to create content, but also gave her/him the possibility of integrating various content

bits into themes, reorganize or modify the content bits, store her/his creations for repeated use, and constantly update her/his knowledge bank. In the long run, the teacher could save preparation time enormously. And it could help her/him keep pupil record too.

With time, computers became more and more sophisticated. In addition to handling text, they could also be used to draw, only geometrical figures at first, but later, anything that our creative needs promoted us to. The advent of colour monitors added a new dimension, taking the imagery that much close to reality. Every bottleneck in making the PC a more capable machine was systematically removed Lots of gadgetry got associated with the computer to do specific jobs. The printer printed the creations; the scanner offered a mechanism of converting printed material (both text and pictures) into the electronic versions, the advantage being that they could be further processed to produce new content. Storage mechanisms got more sophisticated. Possibilities of storing large quantities of electronic information grew. With storage increasing, mechanisms for organizing the data for easy retrieval were also invented. And all the while, its ability to compute was becoming faster and the size smaller and smaller, making it more compact. And ... thus progressed the story of computers. Computers have evolved from the most primitive to quite a sophisticated machine, but the evolution is by no means complete. Today, computers can

handle text, images, audio, video and animations. They can simulate many real life scenes and above all, do all this quickly and efficiently.

But, despite all these capabilities, the PC is quite a dumb machine. On its own it cannot even add two and two. It requires instructions for every move it has to make, every number it has to crunch. These instructions are what are called 'programs' or more commonly 'software'. And a whole variety of software is available today to do almost anything that we wish the computer to do for us. In its present form, as we mentioned earlier, the PC has evolved into a truly multimedia machine.

If the computer could do this much, it would only be natural to expect more from it How about computers "talking" to each other? Well, that was easily acheived. A large number of computers got connected to each other, sharing the material on them and allowing groups of people to work on tasks together. What if the computers are far apart, say in Delhi and Bangalore, or better still, in Delhi and New York. Well even that has been achieved. Millions of computers across the globe are today connected and can talk to one another.This is the Internet.

The Internet has made it possible for us to share information between computers across the globe and today, millions of computers are connected this way. It has further prompted people to explore different ways in which this technology can be put to use.

One of the most popular uses of the

The Internet and the World Wide Web

The Internet is a very huge network of computers connected to one another enabling sharing of resources among them. How does ...is actually work? A large number of very fast and large storage capacity computers connected to one another form the internet backbone. These computers can receive and transmit requests from hundreds of computers at a time. Such computers, called 'servers', are connected through large capacity telephone cables, microwave or satellite linkages. A large number of computers are then connected to these servers through, say, regular telephone connections.
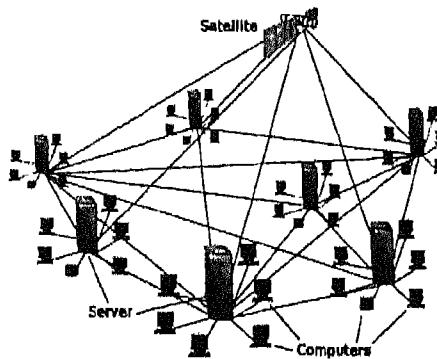
Fig.1 The Internet consists of servers connected through cable, microwave or satellite. Our PCs are connected to these servers

So when you say your computer is connected to the internet, you are saying that your computer is connected to a telephone; you have dialled a number belonging to the server and your computer is now able to receive and transmit messages to the server. The server in turn transmits your messages to other computers through different servers

There are millions of pieces of information in various media stored on these servers and made available for sharing across this network of computers. All these pieces of information distributed over several thousand servers together constitute a huge library called the World Wide Web or WWW for short.

Collections of pages related to any topic stored on any of the servers together constitute a website. Each website has a unique address which helps us locate information on that site. For example to seek information from the NCERT you use the address www.ncert nic.in. The address states that you can find NCERT in India (.in) on a server (.nic) on the World Wide Web (www).

There are millions of websites catering to the different needs of different people. You can find websites on almost any subject on the World Wide Web.

Internet was and is the electronic mail, e-mail for short. This is a method of exchanging messages across the Internet. And it reaches almost instantly If such instantaneous transmission can happen, we can use this medium to set up a conversation between two people, can't we? If we can get a group of us to participate in this conversation at the same time, we have run an e-meeting. Further, we could get a few experts or resourceful people on our chat and follow up their presentation with an interaction session. We have now participated in an e-conference. Please note that all this while you could be sitting within the comforts of your home Essentially, we are trying to highlight the possibilities of networking people that the internet provides Just in terms of time and money involved in organizing a meeting or a conference, this could turn out to be far more efficient.

The e-mail can be used in a variety of ways for enriching classroom experience Sometime ago we received this e-mail.

Date· Wednesday, March 29, 2000 9:01 AM
Subject· Request by a fourth grade class

We are a fourth grade class at Richard Crane Elementary School in Rohnert Park, CA which is 50 miles north of San Francisco. In conjunction with the 2000 census, we decided to do an e-mail project. We are curious to see where in the country and world our e-mail will travel by internet between the period of February 4 to April 10, 2000.

We would like your help If you receive this message and are willing to participate, we ask you to do these two things.

1. E-mail us and tell us your location so that we can plot it on our U.S or World map

2. Forward this e-mail to as many people as you can Thank you for any help that you can give Our e-mail address is boarman@crpusd.sonoma edu

We hope to hear from you soon!
Your friends

Yet another use for the Internet was to publish information in the form of websites. Websites are a collection of logically and thematically connected pages of information While it began as text, the web page can today contain pictures, sound, video, animations or simulations. They can have sophisticated search options, intelligently catering to the requirements of the user, making the site highly interactive. For example, a company manufacturing school stationery items would publish product lists, discount schemes, order forms for supplies, and of course information about the company and its products. An educational institution could on its website, announce courses, describe admission procedures, put up application forms, announce examination results and even provide course materials. Many American and European Universities even run some of their courses through the Internet One good Indian example is the website of the Indira Gandhi National Open

University (http://www.ignou org). Organizations and institutions publish websites describing their work, services and achievements. Museums and libraries put up information about various areas of interest There are millions of such websites on the World Wide Web, with information about almost every branch of knowledge and every topic of interest. And as we mentioned earlier, they have information in different media — text, pictures, video, sound, animation and simulations.

Is this then, the *Dream* we were looking for? To qualify for the *Dream* status, this technology would not only have to become a great resource for our pupils and us, but also make our life easier. We want it to become the handyman around taking on the mundane chores and letting us do the creative bit. Learning to use a technology and putting it to good use must be easy and not become a task in itself, it must have a shorter and less steep a learning curve. If we come to grips with the gadgetry quickly, then we can concentrate on the use of the technology for our purposes. If not, it can become frustrating and one might find oneself

Can you get my children a few pictures from the Internet?
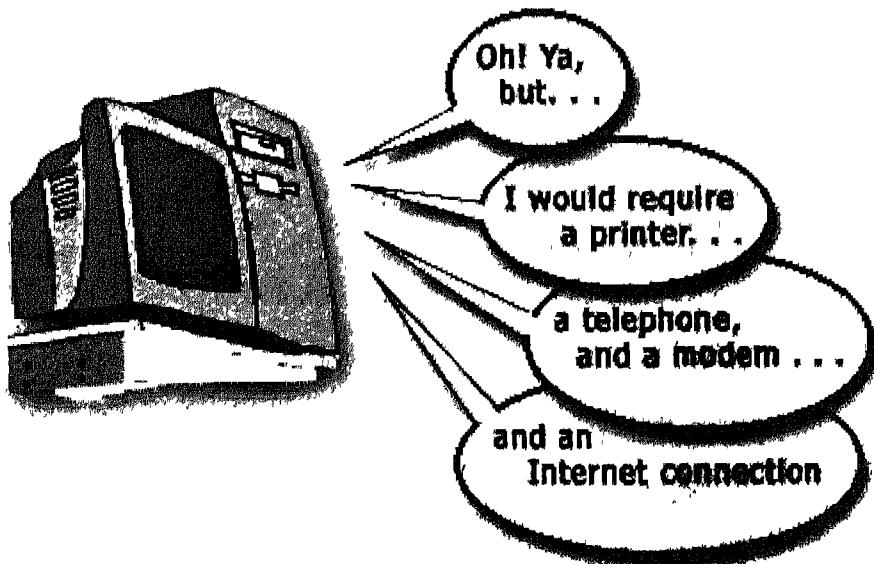
Fig 2. The Internet is a resource mine. But it still requires many gadgets to get us the information.

concentrating less on teaching and more on honing one's computational and graphics skills!

The critics do not believe that computers and the Internet are ready for the *Dream* status yet. One of the major issues involved in the use of computers or internet in schools is that of access It is still relatively expensive and it may be sometime before a computer connected to the Internet is in every teacher's hands. Also, the computer uses a telephone connection to connect to the Internet. With the internet demanding good communication facilities, it may be a while before far flung places find themselves connected. Secondly, since the invention of the PC, progress has been rapid and today the PC is much better equipped and quite easy to use Still, the computer comes with a variety of small gadgets connected to one another making it appear quite complex, enough to put off the weak-hearted (Fig. 2). The World Wide Web has plenty of resources. But the hunt for these resources can be quite time consuming. Also, these resources may not have been written fo. teacher, nor would it be in a langu he teacher is comfortable with. Henc a teacher deciding to use the computer and internet may find herself/himself spending a lot of time and effort in taming this technology and harnessing its utility for her/his class.

In response to the criticism, we must state that a number of efforts are being made by the government and other agencies to make computers and the internet more accessible to the teacher. It would be more user-friendly in the near future. Efforts are also being made to make available resources created for the teacher or at least re-packaged to meet the teacher's needs. We will discuss these efforts in detail in the concluding part of this series. We will also try to show that you, the teacher, can yourself start publishing content on the Web. And the day is not far when together we can make *Dream* a reality

Plight of English Language Learning in Government Schools at the Primary Level

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ENGLISH, in spite of being a foreign language in India, has asserted its importance and acquired an indispensable place in the life of the common man. It has become one of the languages to be learnt at the primary level in schools.

The Delhi Government has taken a lead in this direction by introducing English as a school subject at the primary level. Some schools have been declared as model schools by the Municipal Corporation of Delhi and these schools too have offered English as a subject, beginning from Class I.

> *The growing importance of the English language has been realized by Indian schools. The Delhi Government has gone a step further and taken a lead in introducing English as a subject from Class I. But the initiation of any programme cannot be successful unless there are enough resource materials, trained personnel, a positive atmosphere and enough mastery over the methodology for the programme.*

It was a matter of pride and prestige for those parents who could not afford public school education for their children. But the scenario is not all that promising. Though the schools have undertaken the responsibility of introducing English in Class I, they are facing many problems, such as

1 Dearth of professionally qualified English teachers;

1 Presently employed primary teachers having no background of teaching English,

- No pre-service or in-service seminars on teaching of English at the primary level;

- Teachers teaching English are not familiar with the latest methodologies of teaching English;

- Teaching of English is more a compulsion for the teacher than a matter of enjoyment.

Since no incentive is given to the teachers who have taken up this assignment, there is very low motivation for learning the concept of the subject.

Due to these practical problems faced by the teachers, the ultimate victim remains the child. The beginner develops a fear complex regarding the language. The subject which was supposedly to be taught as a joyful learning experience, becomes a terror for the child. And the poor parents run from pillar to post to arrange tuitions for their young ones.

An effort has to be made immediately in this direction. The newly appointed teachers should get orientation in the teaching of English before they are appointed in schools. Regular in-service programmes for primary teachers should also include topics related to English teaching. English teaching should be given due weightage in the course design of these in-service programmes. The Education Department should give some incentive or motivation to these teachers. More funds for teaching aids may be provided to schools in order to facilitate English teaching English should be introduced as a compulsory subject in pre-service teacher education programmes related to primary or elementary education.

Some alarming facts based on a survey are certainly thought provoking, such as

1. In most of the schools reading material is available in Hindi but only a handful of books in English are available for students at the primary level.

2. Most of the teachers who teach English at the primary level do not have oral/written command over the subject They are reluctant to converse in English.

3. Most of the teachers teaching English at the primary level are ignorant about skill-based language teaching and Communicative Approach in language teaching.

4. Teachers are unfamiliar with the concept of developing a language kit or maintaining a language laboratory in schools

Indiscipline in Schools

Reasons and Remedies

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Indiscipline, among school students is a major problem of the day. It has been probed into by psychologists, educationists, teachers and social workers from several points of view. But it is the teacher who is at the forefront to tackle indiscipline in his/her classroom.

Discipline occupies an important place in the school system. It is, therefore, important to know about the problems of indiscipline and how to tackle them. Education takes place according to the age, ability and attitudes of pupils. Students cannot be taught against their wishes. The teacher has to innovate several new teaching-learning processes. This article deals with the causes of indiscipline and suggests some remedies to overcome the problem .

To quote a few remarks of great thinkers — J. J. Rousseau once said, "Child is essentially speaking good, he is not a creature of sin He seeks his own destiny in this world He should not be made to behave like a gentleman." Martin Luther said, "My friends, nowhere on earth can you find higher virtue than is displayed by the stranger, who takes your children and gives them faithful training, a labour which parents seldom perform, even for their own offsprings." M. V. C Jeffery says we should train our pupils to think for themselves. According to him, we should have depth in ourselves, for communicating security to the young ones who need it the most, otherwise they are in the wrong company with no roots in themselves. It is, too, a strong philosophical statement when seen from the practical point of view.

'Indiscipline is a part and parcel of almost every school. Generally, it is quite difficult to find a person who was not caned in his school.

Some Background Remarks in Context

Whereas the present century is called the 'century of the child'. It is rarely said of the preceding centuries. Punishment leading to physical injuries was considered desirable for making children perfect in life. Also, it was supported by traditional experiences and religious belief. And no teacher was dragged to the court of law.

To illustrate, H. G. Wells was very frequently caned at school at the slightest provocation. Martin Luther used to receive more or less fifteen strokes for violating the school rules. At Eton, almost everyone was caned at the flogging block. Goglol, in order to escape punishment, pretended to be mad. In short, it can be said that several famous men in their childhood received corporal punishment. A couple of sayings which illustrate the thinking of the preceding centuries are given below.

- Spare the rod and spoil the child.
- He who spares the rod, hates his son, but he who loves him is diligent to discipline him.

Definitions of Discipline

The definitions of discipline have to be seen rather than formulated within the social context of classrooms, schools and the community from where both teachers and students come. Defining the term 'discipline' precisely is difficult because of its varied nature. Still, some definitions can be mentioned as follows

- It is a process designed to aid students develop social behaviours and attitudes for appropriate participation in an adult democratic culture

—Furtwengler and Kennert

- It is a form of control exercised by the teacher in his day-to-day teaching

—P. Francis

- It is a continuum of misbehaviour from simple non-compliance to hitting other pupils or refusal to work.

— Kyriacou

In a majority of the cases, the problem of indiscipline occurs as a result of certain challenges or events. Some of the instances may be as follows.

- Cutting classes and taking drugs together
- Locking teachers in the classrooms
- Throwing pieces of chalk, paper balls, etc.
- Prompting dogs and cats to enter the classroom
- Writing abuses on school walls and teasing certain teachers
- Offering shaky chairs to them
- Applying highly itching herbs on clothes and furniture
- Posting anonymous letters of threat

Such behaviours are tolerated by some teachers. Corporal punishment is prohibited by law in almost all the civilized countries of the world. It has, therefore, become essential to understand this malady in its exact form.

Causes of Indiscipline

We cannot condemn schools because the children are human beings—therefore looking into indiscipline we should take an overall view of ourselves, our students, our classroom rules and strategies and the community where they come from. The causes related to indiscipline are, generally speaking, individual and situation specific. Researches in this area are too sketchy and hence fail to provide proper guidance to the teachers. E.C. Wragg, examined this problem and chalked out several causes of indiscipline for the practising classroom teachers. These are

School Factors
- Kind of intakes of students
- Size of school, spread of building and the number of teachers
- Mechanical and inflexible rules
- Curriculum learning difficulties
- Mixed ability classes

Classroom Factors
- Noise/passive non-cooperation
- Student–teacher personality clash
- Rigid / inconsistent / unclear rules

- Hostile, aggressive teacher style
- More frequent punishment
- Lack of reward and motivation.

Remedy for Indiscipline

It is a sort of physical disease infecting students and sometimes the teachers also. It can be controlled to some extent if provisions for its causes and cures are made, preferably at the action research level. Given below are some principles for maintaining classroom discipline.

- Start by being firm with students – relax later on Pupil–teacher relationship is a delicate one and needs to be cultivated
- Get the class to be silent before starting lessons
- Call students by name — they are not roll numbers.
- Prepare lessons thoroughly and structure them firmly.
- Arrive at the classroom before the students.
- Be mobile—walk around the class.
- Learn voice control to suit various occasions.
- Use a variety of techniques — build up blackboard summary with the help of students. Do not dictate notes.
- Make your rules clear. Do not have favourites.
- Develop effective question technique.
- Learn time management — try to complete lesson in available period.

- Anticipate discipline problems and act accordingly

- Avoid confrontation.

- Use humour constructively.

- Make homework interesting, challenging and thought-provoking.

- Be sensitive to fulfil needs.

These principles are logical rather than psychological. A teacher has to think of several alternatives if his first approach fails to tackle the problem of indiscipline. For applying these principles successfully he has to know the background of the students.

The problem of indiscipline is a fact in our schools. Still, it has its own place in the functioning of the school system. We cannot change our schools. Maintaining discipline is a skill which all teachers must develop since it is they who have to bear the brunt of indiscipline.

Drama
A Powerful Tool at the Primary Level

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Ashalata, a Class III teacher is reading out to her students from a science textbook. She reads about the butterfly. She then uses pictures to explain to the students the changes that occur as an egg transforms into a caterpillar and then the metamorphosis from a chrysallis into a butterfly. Later on, the students would probably be given homework to sketch a drawing, write answers or notes on this project. Most teachers are used to such traditional methods.

Ashalata, being a creative teacher, besides engaging in the traditional method also dramatizes the different stages in the life-cycle of the butterfly. She creates a short, four-minute drama and through actions, dialogues, voice changes and use of the body, she portrays the different stages.

Throughout this exercise, the children watch attentively. They laugh and feel happy when the caterpillar grows into a colourful butterfly waving its wings in the air.

After a lot of noise, the children are formed into groups of four and each group is given a chance to perform in its own manner. The students remain completely absorbed occasionally commenting in between, with varying sounds, movements and characterization. Expressiveness marks the students' performances.

> *Children love fun, play, liveliness, diversions, etc. The traditional, stereotyped method of teaching in the class does not make much impact on them. In this respect drama can be a powerful tool for teaching them. It can also help to develop in them a sense of creativity and the power of imagination.*

The teacher has used dramatics to reinforce the concept of fun and joy which characterizes the classroom and drama proves to be a powerful tool in classrooms for clarification of concepts. Though this is not a new method, the technique needs a fresh look

Why Use Dramatics?

Drama used creatively for reinforcing ideas, views and concepts is now much in vogue. In fact, creative dramatics, a form of imaginative play that helps students learn, uses no written dialogue, making it different from performing a play (Block, 1997, Edwards, 1997, Heinig, 1993; Kelner, 1993). Creative dramatics is also characterized by allowing students to create and use words to convey meaning. The teacher can provide guidance in the beginning by encouraging students to improvise or change the original form. (Edwards, 1997; Heinig, 1993; Kelner, 1993).

Dramatics in Schools

In 1998, two major events were visible in schools. The National School of Drama (NSD) organized a Children's Theatre Festival 'Jashnebachpan' from 10 to 20 November 1998 at Shri Ram Centre, New Delhi The event provided an opportunity to children for creative expression in plays like *Tulsi, Tulsi; Aap Hamare Hain Kaun; Swadeenala Sangram*, etc. Ten plays were staged. The organization of this event aimed at guiding the creative desires of not only children but of those teachers as well who taught subjects other than drama and who had the

spirit of an artist and performer in them

Another important motive was to draw the attention of the policy makers of education and culture to meet and work out an educational policy which makes theatre an important subject like music, dance, painting, etc., in the education process, and does not marginalize it as a fringe activity. Another event organized during this period was The Navodaya National Integration Meet '98 from 28 November to 3 December 1998 at Bharatiya Gram, New Delhi, by the Navaodaya Vidyalaya Samiti. Around 700 students from about 200 districts participated in this meet.

The objective of this meet was to help students explore and understand the cultures of the different regions of the country and to promote time-tested values through art

Among the five camps set up was the Traditional Arts and Theatre Camp organized in collaboration with the National School of Drama (NSD) under the name *Natya Navodaya : a Festival of Plays by Children* The festival hosted eight plays by Navodaya Vidyalaya students. Such festivals for children provide an opportunity not only for them but also for parents and teachers, in fact, for the whole community, to come together. It provides a platform to observe talent and bring out creativity at its best. It also creates an opportunity for children to participate in a joyful group activity. Moreover, the focus on awareness raising themes relevant for children is important.

Though the aspect of fun and entertainment which children usually want is there, the full scope and value of theatre in the educational process has not been delved into. The concept of theatre has been used for larger purposes. Its role in day-to-day transaction in the classroom needs to be explored. Drama can be an effective tool for language learning also and thus, can be used for meaningful purposes instead of being just an extra-curricular, once-a-year event.

Now, it is for educationists, planners and policy makers to think of ways of bringing theatre/drama into the school complex and the classroom and use drama as a means of curriculum transaction.

Components of Drama

There are four necessary components of creative dramatics : structure, open-endedness, a safe environment, and feedback.

Structure

Pretending and role-play come very naturally to children. However, improvising a short drama can prove to be a very difficult and abstract task for them. The teacher can help by providing them with a short and simple structure in the initial stages to guide them. He/she can demonstrate the basic story, actions, dialogue, characterization etc.

Open-endedness

Creative dramatics is spontaneous and changeable. It helps to provide a structure to begin with. However, this structure should be flexible and open-ended to promote creativity and individualization. As the children become more comfortable with the idea of drama, they will begin to use ideas and experiences from their own lives to create unique variations of the original themes. Avoiding the use of written dialogues and encouraging improvisation help the children in exploring alternate endings and using their creative talents.

A Safe Environment

Sometimes children become more shy, reserved and uncooperative. This problem can be solved when the teacher creates an enjoyable and safe environment. A teacher who participates in creative dramatics creates the right atmosphere for the students to come up with their own creative endeavours. Positive, specific feedback that acknowledges the creativity and talent of the children and their efforts will put them at ease to continue acting creatively.

Feedback

Feedback, both formal and informal, helps the students put forward their creativity at its best. Students like to receive feedback and are better able to reflect upon the dramatic experience and to describe successful (and less successful) dramatic elements.

Drama as Group Activity

Drama initiates an immediate personal

exchange among the actors themselves and also between the actors and the audience. In this sense, any dramatic activity becomes a group activity of great importance.

Thus, drama proves to be a powerful learning tool in which care must be taken to allow students to become comfortable while using it. It can certainly be used once a week in the classes. It can also be used in between classes or towards the end of the day when the children become tired and restless and need some change from the monotony. The students would also love to perform short skits and mono-acts. Finally, drama in classroom can be full of fun and is highly enjoyable. Creative dramatics can prove to be a year-long adventure that can be effectively used in building up a sense of community in the classroom and enhance learning. Moreover, the creative experience itself is of ultimate importance.

School Effectiveness and Scholastic Achievement of Formal Primary School Children in Terms of MLLs

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EDUCATION, is one of the important factors in shaping the personality of an individual. Through it, one learns various role expectations and also the means and mechanism of role fulfilment. Education is a process of developing in the child knowledge, skills, attitudes, values and behaviour patterns that society considers desirable for him/her to have, both as an individual and as a member of society.

Basic education spanning the first five years of schooling, emphasizes reading, writing and making the child aware of his/her immediate environment. It has immense utility in developing life and production skills absolutely essential to meet other core needs. It equips the children with knowledge, skills, values, attitudes,

Universalization of Primary Education and raising the achievement level of primary education are matters of the highest priority in the national effort for revamping education in India. With the view to assess the scholastic achievement of children in terms of MLLs in Environmental Studies (EVS-1), 500 children (250 boys and 250 girls) of 100 formal primary schools of Rewa district were studied with the help of a scholastic achievement test (SAT). Gender-wise as well as locale-wise comparison of their achievement has been done, the data statistically analyzed and results interpreted.

etc, to make optimum use of scarce resources and better use of available services.

India has achieved substantial

progress with regard to universal access particularly by creating facilities for primary education. Though India attained a literacy rate of 52.21 per cent in 1991, Universalization of Primary Education (UPE) is essential to accelerate the pace and rate of economic growth. A very massive, nationwide programme of making everybody literate in a very quick span of time could perhaps achieve the constitutional obligation of UPE. UPE and raising the achievement level of primary education are matters of the highest priority in the national effort for revamping education in India.

The National Policy on Education, 1986 gives unqualified priority to universalization of elementary education (UEE). The thrust in elementary education emphasizes (i) universal enrolment and universal retention of children upto 14 years of age, and (ii) a substantial improvement in the quality of education to enable all children to achieve essential levels of learning.

Attainment of the goal of UPE depends upon the success of the District Primary Education Programme (DPEP) which was started in the country to ensure (i) 100 per cent enrolment of children in the age group 6-14 years, (ii) retention of children till five years of schooling, and (iii) mastery level of achievement in mathematics, the mother tongue and environmental studies (EVS-I and EVS-II). The success of the programme depends to a great extent upon the quality of training besides textual content and flexibility in functioning. The other aspects of DPEP aim at improving the quality of teachers through in-service training programmes.

Rewa is one of the educationally backward districts of Madhya Pradesh. The overall literacy percentage of the district increased from 34.97 in 1981 to 44.38 in 1991. There are 1762 formal primary schools (FPS) along with 3552 teachers in Rewa district. The condition of rooms and facilities available in these schools were found much below satisfactory level. Talking about the facilities in classrooms, Govind and Varghese (1996) report that "even very essential classroom teaching items like blackboard, chalk and duster are not available in many classrooms in Mandla and Rewa localities. Student desks are totally absent in all rural localities and even mats are not available in Rewa". Krishna Kumar (1996) rightly observes, "Even the best qualified teacher cannot do much without a blackboard, a play space and books".

Environmental studies (EVS) is an important area of the school curriculum at the primary school stage. It helps the child to understand his physical and social environment It also helps the child in interacting with his immediate environment in the present as well as in the past. The need was felt to make a thorough study of the achievement of children in terms of Minimum Levels of Learning (MLLs) in EVS-I (social studies), one of the main subjects at the primary level.

Objectives

The study was conducted keeping the following objectives in view:

- To compare the scholastic achievement (SA) in (EVS-I) of boys and girls studying in formal primary schools in rural areas;

- To compare the SA of boys and girls studying at FPS in urban areas;

- To compare the overall achievement of boys and girls;

- To compare the SA of boys studying in FPS in rural and urban areas;

- To compare the SA of girls studying in FPS in rural and urban areas;

- To compare the overall achievement of children (boys and girls) in rural and urban areas; and

- To identify the level of development of competencies (MLLs) in EVS-I in FPS children.

Delimitations

Keeping in view the background of the problem and research design alongwith constraints of time and resources, the present study was delimited in the following ways.

- The sample was drawn from both rural and urban areas of Rewa district in Madhya Pradesh. It included 100 government formal schools at the primary level and children of Class IV only.

- The study was confined to environmental studies (EVS-I).

- The study was delimited to five Blocks out of nine of Rewa district. They were Gangev, Mauganj, Naigarhi, Rewa and Sirmour.

The ten major competencies aimed at the cognitive, affective and psychomotor domains of development together with the content elements were supposed to be covered under environmental studies. The present study was confined to the first competency related to both social studies and science, and the other five related solely to social studies.

Methodology

Sample Size

In all, 500 children (250 boys and 250 girls) from both rural and urban areas constituted the sample size for the study. The formal primary schools and children were selected randomly.

Tool and Technique

The assessment of scholastic achievement of children in EVS-I was done with the help of a self-constructed and standardized scholastic achievement test (SAT). The SAT consisted of 35 test items including 20 objective type, 10 very short answer type and five short answer type items. Space for answering the items was provided in the paper itself. The paper was of two

hours' duration and had weightage of 100 marks. One day was devoted at each FPS for administering the test.

Scholastic Achievement of Children

For assessing the scholastic achievement of children studying in FPS, gender-wise and locale-wise comparisons have been made.

Gender-wise Comparison of SA

Gender-wise comparison of the scholastic achievement of boys and girls studying in FPS in rural and urban areas was done. A statistical analysis of their

boys and girls in EVS-I. The mean scores of boys and girls are found to be 34.94 and 30.97 out of 100 marks alongwith SD values, 16.02 and 12 73 respectively. The calculated 't' value of 2 17 is found higher than the table 't' value of 1.97. Hence, there is significant difference in their achievement at 05 level for df: 248.

(ii) *Comparison of SA of FPS Boys and Girls in Urban Areas:* The mean scores of urban FPS boys and girls are found to be 32.48 and 28.07 whereas their SD values are of the order of 14.59 and 13.79 respectively. The calculated 't' value of 2.46 for df: 248 shows that there is

TABLE 1
Gender-wise Comparison of SA of Children in EVS-I

S N.	Stream		N	Mean	S D.	't' Value	Inference
1.	Rural	Boys	125	34 94	16 02	2.17	P < 05
		Girls	125	30 97	12 73		(df 248)
2.	Urban	Boys	125	32.48	14.59	2.46	P< 05
		Girls	125	28 07	13 79		(df . 248)
3.	Overall	Boys	250	33 71	15 34	3.26	P < 01
		Girls	250	29.52	13.33		(df 248)

achievement has been given in Table 1.

(i) *Comparison of SA of FPS Boys and Girls in Rural Areas:* The sample size consisted of 125 boys and 125 girls from the rural areas of Rewa district. Table 1 presents the mean scores along with SD and 't' values of FPS

a significant difference at .05 level in the performance of boys and girls studying in urban formal primary schools, the tilt being in favour of boys.

(iii) *Comparison of Overall SA of FPS Boys and Girls:* The sample consisted of 250 boys and 250 girls from formal

primary schools in rural and urban areas of Rewa district. Comparing the overall achievement of boys and girls, it is found that mean scores are 33.71 and 29.52 along with SD values of 15.34 and 13.33 respectively. It is observed that the performance of boys is better than that of the girls. Statistical analysis of their performance reveals that there is a significant difference in their achievement at .01 level as the calculated 't' value of 3.26 for df: 498 is higher than the table 't' value of 2.59.

FPS Boys : Comparing the scholastic achievement of rural and urban FPS boys, it was observed that boys performed slightly better than their counterpart urban boys by securing 34.94 as mean score. The urban boys achieved 32.48 as mean score. SD values are found to be 16.02 and 14.59 respectively and the calculated 't' value is estimated at 1.27 for df of 248 at .05 level. Hence, there is no significant difference in the performance of boys studying in rural and urban primary schools.

TABLE 2
Locale-wise Comparison of SA of Children in EVS-I

S. N	Stream		N	Mean	S D	't' Value	Inference
1	Boys	Rural	125	34.94	16.02	1.27	P > 05 (NS)
		Urban	125	32.48	14.59		
2	Girls	Rural	125	30.97	12.73	1.73	P > 05 (NS)
		Urban	125	28 07	13.79		
3	Overall Children	Rural	250	32.96	14.58	2.08	P <.05
		Urban	250	30.27	14 34		

* NS· Not significant

Locale-wise Comparison of SA
Locale-wise comparison of the scholastic achievement of children studying in formal primary schools in rural and urban areas of Rewa district was done. Statistical analysis of their achievement has been presented in Table 2.
(i) *Comparison of SA of Rural and Urban*

(ii) *Comparison of SA of Rural and Urban FPS Girls:* Though rural girls of FPS performed better with a mean score of 30.97 as compared to the urban girls with a mean score of 28.07, no significant difference was found in their scholastic achievement when statistically analyzed. The calculated

't' value is found to be 1.73 (df : 248) at .05 level as given in Table 2.

(iii) *Comparison of Overall SA of Rural and Urban Children*: Mean scores and SD values of the achievement of rural and urban FPS children have been found as 32.96, 30.27 and 14.58, 14.35 respectively. Mean score and SD value for rural FPS children are found slightly higher than their counterparts studying in urban primary schools. There is found to be a significant difference in the performance of the children of the two locales as the calculated 't' value is found to be 2.08 which is higher than the table 't' value of 1.96 at .05 level for df: 498.

Identification of the Level of Competencies in EVS-I in FPS Children

At the primary stage, the most essential core skills and competencies are included in the curriculum. The MLL approach implies a calculated effort to include those minimum essential and common competencies that all children must master. The MLLs are designed to assist the teacher to evaluate whether the learner is able to develop those competencies through teaching-learning strategies. Figure 1 is a graphical presentation of the level of different competencies of EVS-I developed in children of FPS of Rewa district. The figures indicate that none of the competencies has been found developed upto mastery level of 80 per cent. Per cent mean scores of competencies 1, 2, 3, 4, 5, and 6 are found to be 54.97, 22.85, 19.60, 36.78, 20.71 and 20.06 respectively.

Visualizing the competency-wise development, it is observed that competency 1 on 'awareness about one's well being in the context of social and natural environment' is the most developed whereas competency 3 on 'knowing
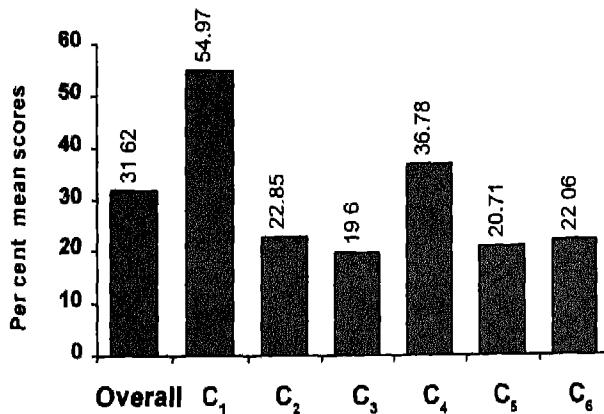

Fig. 1 Development of Competencies (C) of EVS-I in FPS Children

about various people at work' is the least developed in the children of formal primary schools. However, per cent mean score of overall development of all the competencies of EVS-1 in children of FPS is found to be 31.62 which is far below the mastery level of learning.

Major Findings of the Study

- There was a significant difference in the scholastic achievement of FPS boys and girls in rural and urban areas. The performance of boys was significantly better than that of their female counterparts.

- The overall achievement of boys was found significantly higher—with 33.71 as mean score—than that of girls (29.52).

- No significant difference has been observed in the achievement of boys studying in rural and urban primary schools.

- No significant difference in the performance of girls studying in rural and urban formal primary schools was observed.

- A significant difference has been found in the overall achievement of rural and urban FPS children. The achievement of the overall children

of rural FPS is significantly higher — with 32.96 as mean score—than that of the children of urban FPS (20.27).

- The overall development of the competencies of EVS-I in children of FPS is found to be 31.62 which is far below the mastery level of learning.

- It is also observed that due to underdevelopment of reading and writing skills, the academic achievement of children is adversely affected.

- A number of in-service training programmes for FPS teachers at DIET and BRC headquarters have shown no noticeable effect on the academic achievement of children.

- Quality education and achievement of children have been mainly affected due to the lack of teacher–learner motivation for the teaching-learning process.

- The main reason for the low level of competencies in the children of formal primary schools of Rewa district may be due to incomprehensibility and vagueness of content along with insufficient training of the FPS teachers for transaction of the curriculum.

Use of Computers in Learning

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THE RAPIDLY changing nature of computer technology continues to expand the range of resources available for any subject specific learning. Education must reflect the influence of technology. Education on the net is easy, comfortable, trendy and interactive. The learner can go ahead and acquire knowledge and skills through computers and adapt the concept of learning by doing. It encourages both independent and collaborative learning, while extending and supporting the learning process. Appropriate computer technology places users in control of their own learning.

> *The application of science and technology can bring about revolutionary changes in the quality of the teaching-learning process. With the aid of electronic devices like the computer, contents/subjects can be taught very effectively and efficiently. Students can learn even without the help of teachers. Furthermore, it will build a scientific temperament among children.*

Effectiveness of Technology

Teaching through multimedia offers an interactive environment for all subjects and skills. Young children respond quickly and naturally to appropriate technologies. Use of technology enhances the effectiveness of a learning experience. Globalization has made its impact on the content, methods and quality of education. Hence the need is to focus not on how to generate knowledge banks, but how to manage knowledge. The curriculum managers will have to design the course contents with specific competencies, which must be objectively

measurable and achievable. By all means, modular courses must be brought into practice. This must not be without freedom for learners to select the necessary modules suiting their aptitude, interests and availability of time.

Computers for Primary Children

The primary level course modules and training packages are aptly used from Classes I to V. These courses help students to understand the basics of computing, and lay a strong emphasis on development of skills. These include mousing, simple keying, navigating screens, computer art skills, internet basics and operating multimedia environments.

Teaching of content through the computer will be very interesting for primary children. For instance, in a language class, learners are taught to learn the alphabet, first; words, phonics, handwriting, making words, use of dictionary, crossword puzzles, word puzzles, word–picture matching and rhymes are picked with gimmicks of colour, sound and animation.

Story telling is an important aspect in the primary level. Computers can tell stories in a very lively manner. Stories like 'Thirsty Crow', 'Hungry Fox', 'A Lion and Four Cows' are wonderfully animated not only for reading but for watching as well as creating.

Primary children can be taught mathematics very easily through the computer. They can be taught to recognize and learn numbers, counting and sorting, shapes, fundamental operations like adding and subtracting and many other things.

The use of softwares like 'Paint and Brush', can take the imagination of children beyond ordinary measures. No more broken crayons and no more wasted papers. No more messed-up pictures. Just neat and clean, lively and breath-taking creations in electronic spread sheets.

Computers for Upper Primary Children

Upper primary children are aged between 11 and 13 years. As maturity increases, activities to develop skills in key-boarding, general applications (word-processing, database and spread sheets), multimedia authoring, computer environments, programming and Internet may be included. The main focus may be on how computers can be used as a resource to accomplish different kinds of tasks. Further, computers can be used for understanding mathematical processes, scientific concepts, language patterns and framework, geographical differences on even historic events, situated within meaningful contexts often derived from real world data or situations.

Animated softwares based on science will be more interesting and effective. Imagine a science teacher explaining the respiratory system or just a body part like the larynx to the class. Just in case, the class does not understand, how many times can the teacher repeat her/his explanation? Instead, the teacher can get the class to

watch an animation sequence where the learners can see all that activity happening in the respiratory system and the role of the various parts. This would help in a deeper understanding of the subject and better recall abilities.

Library Operations through Computers

Books on shelves in the library will be reduced day by day, replaced by computer terminals connected with Internet course materials based on academics which would be digitized and posted on the sites of the terminal schools and the enrolled students would be given access. Students would e-mail their doubts to the teachers concerned and have clarification on-line. If they wanted any kind of information, they could be down-loaded very easily. The greatest advantage would be 'peer group interaction', in which students would be able to chat with one another, with or without being monitored by a teacher.

Publication in the form of books by conventional publishers received a jolt when a new challenger, from San Jose, California in the U.S. offered authors the option of finding readers and selling to them directly, bypassing conventional channels. The author only had to transform his work into electronic format and e-mail it to a new internet-based bookshop, "www.fatbrain.com". The author had to set the price for one's non-book. The author had to give $1 per month as token holding charge. Every time a copy was sold (the buyer paid electronically and downloaded the book),

the electronic company remitted to the author, half the selling price of the book. This is called e-book or electronic book which is a great threat to the printed book industry. Dick Brass, Vice-President, Microsoft, says, "By 2020, 50 per cent of everything we read will be in electronic form, paperless publishing".

Home Network

All the text material would be available not only in the library network but also in the home network which is very fast becoming familiar all over the world. Children can access their learning material from the home network. The most common way to access the net today is via modem linked by the telephone line to an Internet Service Provider (ISP). In Mumbai and Bangalore the Internet providers were already offering Internet access, not through the telephone line but through the Cable TV connection. In recent months, there is another contender for a chunk of the home networking market—Powerline Networking. This uses the surplus capacity on another network that is already installed in most houses and is even more common than the telephone line : the wiring that carries electricity all over the house. Book shelf's interactive books on a touch screen which updates and recharges every day in line with students' interest; food analyzer which weighs the food and provides information on calories and carbohydrates—the home of tomorrow will be more than a roof over the head. It will be the ultimate in convenience,

comfort, efficiency, enrichment and fun.

Primary education plays an important and significant role in the development of concepts which must be correctly and joyfully imparted. Information technologies help primary school children to learn the concepts correctly and effectively with full freedom. This increases their independence and self confidence. The computer has been taught as a course in many of the schools but is not being used as a tool in classroom instruction. More and more, educationists need to concentrate on how to use the electronic media, particularly for instruction at the primary stage.

The Changing Professional Roles in the Education of Tomorrow

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HUMANITY is marching towards a homogeneous and cohesive society. Educational institutions should work for improving the quality of education right from the pre-primary stage to that of higher education. One of the major tensions that educational institutions are facing, is that between the extraordinary expansion of knowledge and the capacity of individuals to assimilate it.,

Teachers have to continuously update their knowledge and upgrade their skills. To improve the quality, emphasis should be laid on relevance of knowledge, skills, personal characteristics, professional perspectives and motivation. Changes and innovations occur in educational institutions on the basis of external and internal factors.

The teaching-learning process is one of interaction and involvement. Teachers are expected to play *multi-dimensional roles* such as orientators, initiators, advisers, managing directors, counsellors, fact finders, fact givers, organizers and guidance workers by assessing the achievements of students and by enabling them to develop interest by integrating curricular and co-curricular activities.

As educators, we should try to identify changes, so that we can make suitable responses and suggestions

> *The march of our society to a new civilization has brought a tremendous responsibility on our teachers. The mechanical relationship between teacher and student limited to the sphere of teaching-learning has to be replaced by a more humane relationship. A teacher has to be more sympathetic and understanding. He/she should develop an interdisciplinary approach for the all-round development of the student's personality.*

about learning requirements. Usually, the danger is that, we ignore the areas of development, and changes may be introduced without any attention being given to the educational requirements. Teachers, as innovators, are change agents of the society who play a key role in stimulating change. 'Risk-taking' has been considered as a feature of the innovator with a 'missionary zeal'. Most teachers, basically dislike change because it introduces elements of uncertainty and instability as well as the 'fear of the unknown'. The professional role of the teachers is to make changes in the areas like curriculum by accepting new learning strategies, by following the latest schemes, by changing the classroom teaching methods from direct-telling instructions to interactive group-based learning, team teaching and to open learning systems. The impact of the changing role of teachers engaged in the profession can be summarized as follows. "While preparing for teaching, an effective teacher should proceed from protection to emancipation, from separation to integration, from exclusion to incor-poration, from restriction to expansion and from emotionality to knowledge."

In this age of science and technology a variety of methods, strategies and techniques are used to help the students to learn. Effective learning takes place, when the subject matter is clearly understood by the learner, so that he/she may be in a position to apply his/her knowledge and understanding in unfamiliar situations and may be able to think critically, creatively, objectively,

discriminatively and analytically and even evaluate and predict the future consequences of the problem. Therefore dynamic and creative learning is very much influenced by the personality of teachers, depending to a great extent on the type of persons they are. Teachers can go through their daily routine of verbal, expressive and performative behaviour and achieve a certain degree of success. But excellence in teaching and excellence in learning require more than going through the motions. Some causative characteristics or factors of excellence are as follows.

- Ability to stimulate interest
- Wealth of descriptive commentary
- Frequent use of illustrative material
- Conversational manner in teaching
- An appreciative attitude, and
- Skill in asking question.

The most difficult characteristic to acquire is the ability to stimulate interest and to motivate. These two go together because interest is one of the best motivators. All the other factors help in attaining this characteristic. But one of the most effective means of stimulating interest is the teacher's own enthusiasm for the subject, work and pupils. Teachers show their concern about their pupils by being natural, pleasant, friendly, sympathetic and by being good listeners. These are not skills acquired by teachers, but attributes built into their personality.

Teaching has been defined as an interaction between teachers and

students. This interaction is considered the most crucial aspect of teaching. The manner in which students interact with teachers is influenced by several factors including the considerable amount of authority of the teachers, his/her prevailing attitude and pattern of conduct and students' feeling about teachers in general. Interaction is also determined by the attractive influence of the teacher. For example *the tone, pitch and speed of the voice, facial expressions, the pause, and the changing interaction styles*, etc. influence students and they respond accordingly. The reactions and responses of the students help the teachers to understand whether they are aggressive or withdrawn, responsive or silent, interested or inattentive. If teachers are aware of the conditions which influence interactions, they can learn to control them. They can help to direct attitudes, change and modify them and create new attitudes. Opportunities can be provided to study together in small groups and discuss problems.

'Directing learning' requires a considerable amount of study and planning outside the classroom. The subject matter to be taught in the classroom must be reviewed by adding "new materials by referring to conventional textbooks, magazines, pamphlets, and other printed material, and also by consulting people, listening to recordings and reviewing films, etc."

Thus all the activities of teachers are intended for 'directing learning'. Therefore, effective learning or direct learning is mainly influenced by the personality of the teacher and his effective use of a variety of methods, techniques, and strategies. As Gandhiji has remarked, "let the students learn from the life-style of their teachers not only within the classroom, but also outside the classroom". Hence an effective teacher should have the following characteristics: *Content Mastery, Confidence, Communication skills, Creativity, Curiosity, Caring for the pupils, Commitment and Catalytic power* besides various other special skills and qualities. Thus the superior teacher is one who likes not only students but also himself, because there is a substantial correlation between 'self-acceptance' and 'acceptance of others'. The superior teachers are personally secure, self-assured and they possess good personality organization. Moreover, successful teachers are more at ease with social contacts, more willing to take responsibility, less subject to fears and worries, are sensitive to the opinions of others and slower in making decisions than less successful teachers.

The 'goodness' of a teacher does not depend on himself/herself alone, it also depends upon the characteristics and motives of his/her students. The qualities and characteristics of a good teacher are as varied and numerous as the characteristics of human nature. So a good teacher is one whose influence on his/her students is constructive, and whose aim is to help the young person to find himself/herself, to discover and to realize his/her intellectual, social and emotional potentialities. He/she must

also try to help the student face and overcome difficulties, unhealthy attitudes self-defeating habits or other disturbances preventing him from becoming a 'productive person'. If the teachers are genuinely interested in the well-being of their students, and are committed to providing rich learning, it is worth remembering the starting sentence in the Kothari Commission Report: " The destiny of India is being shaped in her classrooms".

The Report of the International Commission on Education on 'Education for the Twenty-first Century' appointed by the UNESCO with Jacques Delors as Chairman, identifies several major areas of tension in education which must be overcome by educational institutions. Tension between global and the local, heterogeneous and homogeneous culture, between the universal and individual, tradition and modernity, the extraordinary expansion of knowledge and human beings' capacity to assimilate it and the tension between spiritual and material pursuits are some of the areas of tension that have been identified. The Four Pillars of Education for the twenty-first century reported in Delors' Report are

1. Learning to be
2. Learning to know
3. Learning to do, and
4. Learning to live together

"Thus education's noble task is to encourage each and every one, acting in accordance with their traditions and convictions and paying full respect to pluralism, to lift their minds and spirits to the plane of the universal and in some measure, to transcend themselves".

The importance of the role of teachers has never been more critical than at this stage of educational growth and expansion. Issues like who becomes a teacher, whom to teach, how to teach, what to teach and the total process of teaching-learning envisaged; shall become more professionally oriented and would require the greatest emphasis on quality aspects.

Our educational institutions face backward towards a dying system, rather than look forward towards the emerging new society. To help avert future shock, we must create a super-industrial education system. Toffler says

In the technological systems of tomorrow, fast, fluid and self regulating machines will deal with the flow of physical materials— men with the flow of information and insight. Machines will be synchronized — men will be de-synchronized. The technology of tomorrow requires not millions of lightly lettered men—but men who can make critical judgements, who can weave their way through novel environment, who are quick to spot new relationships in the rapidly changing reality.

Toffler suggests that the prime objective of education must be to increase the individual's 'cope-ability', the speed and economy with which he can adapt to continual change. Taylor, following Toffler's ideas on "future shock" concludes that a pre-requisite for survival, is to learn to live with constant pervasive change. According to Barnes

"Teaching is a teacher-centered activity, it deals with information known; known that is to the teacher. Learning is a learner-centered activity in which the learner deals with the unknown". It is more comfortable to deal with the known. Barnes formulated a three-point programme, 'DOR', to denote disorientation (i.e. unlearning the old role) orientation and reorientation.

It would be interesting at this juncture to have a glimpse of some early Indian conceptualizations of the teacher and teaching, so that a reconstructionistic model may emerge combining the best of the ancient and modern perspectives.

The highest education in India did not emerge from the formal school in the city, but in solitude where the educand might realize his fullest self rather than fill his mind with information embodied in the codified disciplines of knowledge (Vedantas). Tagore says, "A most wonderful thing we notice in India is that here the forest, not the town is the fountain-head of all its civilization". According to Mookerji, the seers or *rishis* are believed to have grasped the truth directly through *tapas* or *yoga* or concentrated contemplation.

Ancient Indian education distinguishes between the supreme knowledge or *paravidya* which can be obtained through meditation and realization from the *apara vidya* comprising the Vedas and Vedantas. The methods of study depicted in the Upanishads include dialogue, stories and parables, renunciation (*sanyasa*)

and meditation (*yoga*). A number of wandering teachers (*charakas*) are also mentioned. Among the teachers, the *guru* is of the highest class followed by the *acharyas* (literally one who practices what he preaches) and *upadhyaya* (one who teaches for a fee).

Buddhist education was more open in the spread of education and in the selection of teachers. Two classes of teachers were recognized in Buddhist education, the *Acharya* and the *Upajjhaya*. There is another class of teachers called *Bikshus*, who trained themselves up as teachers of *Dhamma*. And as a part of this training, they were required a talk about *Dhamma* with one another before they preached to others. The highest class of Bikshus were given to meditation.

Manuel's study of education in India through early Tamil sources, brings out certain historical facts and inter-pretations, neglected in the educational histories drawn solely from Sanskrit and Pali sources. A kind of secular Sangam (Academy) is said to have prevailed in the south by about the first three centuries of the Christian era in which the scholars were assessed by their merits irrespective of their religion and caste. The *pulavar* (scholars / poets) were expected to wander through the five fold land, studying natural products as well as social life among all kinds of people and present their findings in the king's courts or in scholar's festivals.

There were other classes of folk artists cum scholars like *panar*, *Kuttar* (dance / drama artists) with their

feminine counterparts called *viraliyar*, communicating messages and feelings with the ordinary people through music and dance. All these groups were expected to wander through the five-fold land (hill, forest, fertile land, coastal area and desert) study nature, culture and other social phenomena and continuously mediate between the people and the king's court/ scholastic circles. The highest level of scholars, named *pulavar*, were drawn from all castes.

The professional role of the teacher in the education of tomorrow needs to be evaluated by focussing on the roles of teachers of the ancient period. The teachers like the Guru, the Bikhus and Panars aimed at the transformation of society through transformation of the mind.

Hence the teacher of the twenty-first century should be able to design a variety of alternative teaching strategies, develop plans for using human and material resources, develop a flexible time schedule that provides for learning the physical and social needs of each student, plan appropriate adaptations of instructions to the needs of educationally backward children. The new millennium should witness a bright, well-meaning, effective and efficient system of education. The elements of responsibility and academic accountability should be inducted at all levels of education right from the student community to the teaching community. A developing country like India should prepare the ground for welcoming the sound, smooth and sustained stride of the technology of the twenty-first century.

The Impact of In-service Training Programme in Work Experience and Art Education on Primary School Teachers

A Study

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Thomas Arnold (1836), the eminent teacher at Rugby said, "I prefer that my students should drink from a running stream rather than a stagnant pool". During the long period of a person's service his professional requirements change continuously due to various factors like, changes in the policy of the Government, technological developments, changing priorities of the society, etc. All professions require further training and special courses of study on a continuing basis after the initial professional preparation.

The Education Commission, in its report submitted in June 1966, has stated that there is a need for organization of a large-scale, systematic and coordinated programme of in-service education so

Work experience and art education play an essential role in the all-round development of a child's personality. With proper planning and effort a teacher can incorporate work experience and art education with scholastic subjects like mathematics, science, languages and social science and create interest among the children. In creating a positive attitude towards the subject and equipping the teachers according to the changing trends, in-service training programmes in work experience and art education play an active role. In this paper, the investigator has discussed the impact of the training programme offered by the work experience branch of DIET in Kanyakumari District on primary school teachers.

that every teacher would be able to receive at least two or three months of inservice education in every five years. The National Commission on Teachers in its report submitted in March 1986, had recommended that "attendance at an inservice training course be made mandatory for every teacher at least once in five years", and that the average length of such a course may be two weeks.

Work Experience

Work experience is a non-scholastic subject strongly recommended by the Education Commission (1964-66) and, later the Ishwarbhai Patel Review Committee (1977-78) named the subject as 'Socially Useful Productive Work' (SUPW). The National Policy on Education (1986) reiterated the concept of socially useful productive work and renamed it as 'work experience'. In Tamil Nadu the subject is being taught as 'Life Oriented Education'.

The National Policy on Education (1986) viewed work experience as purposive and meaningful manual work, organized as an integral part of the learning process and resulting in either goods or services useful to the community and considered as an essential component at all stages of education to be provided through well structured and graded programmes. It would comprise activities in accordance with the interests, abilities and needs of students, the level of skills and knowledge to be upgraded with the stages of education. This experience would be helpful to students on their entry into the workforce.

Art Education

Art education is the development of the aesthetic nature of a person. Art education fosters the growth of originality and the development of creativity in the child. The subject is easily integrated with other curricular areas. So art serves the important function of contributing to the learning of many other subjects. Art education enhances the interest in learning because children enjoy the beauty of art.

At the primary stage the main objective of art education is to make the child aware of the good and the beautiful in his environent and to express his feelings through simple performing arts like music, dance and drama. Art education enables the child to discover and identify his/her own sensibilities and preferences through exposure to a variety of media and materials and to optimize his/her own capacity in one or more arts. The aim at this stage should be to provide the child with an integrated learning experience of various forms of art i.e., drawing, painting, collage, modelling, music, dance and drama.

Role of DIET

The main objective of the National Policy on Education (1986) was to improve the quality of education and to universalize primary education. District Institutes of Education and Training were formed to give in-service and pre-service training to achieve these targets. The in-service training offered by one of the seven academic branches of DIET, namely, the work experience branch is a nodal

agency which improves the quality of work experience and art education.

The work experience branch of the DIET in Kanyakumari District conducted training programmes in work experience and art education. The services of the DIET faculty members of other branches and craft teachers working in certain schools were also utilized. The teachers were trained to convert locally available materials into useful products. Lectures-cum-group discussions were conducted to create a positive attitude towards the subject. Various other matters like importance of social awareness, knowledge about the incorporation of work experience and art education with other subjects and the method of evaluation of experience and art education activities were also discussed during the training programme.

Objectives of the Study

The study was conducted with the following objectives.

(i) To find out the impact of the in-service training programme conducted in work experience and art education on primary school teachers with respect to (1) Change in attitude of the teachers towards work experience and art education, (2) Social awareness among the teachers, (3) Incorporation of work experience and art education with other subjects, (4) The evaluation system to be followed in work experience and art education.

(ii) To find out whether there is a significant difference in the impact of the in-service training programme between (1) male and female teachers, (2) rural and urban teachers, (3) government and private primary school teachers who have undergone the training programme.

Methodology

Sample

By considering the 512 primary teachers who had undergone the training programme offered by the work experience branch of the DIET in Kanyakumari District as one group and the primary teachers who had not undergone the training programme as another group, the investigator has followed the stratified random sampling technique to select the sample. Samples have been selected from men and women teachers, rural and urban teachers and government and private primary school teachers. The sample selected contains 151 primary school teachers who had undergone the training programme and 200 primary school teachers who had not undergone the training programme.

Tools

The investigator prepared a questionnaire and conducted a pilot study by selecting 20 teachers in order to find out the reliability of the tool. The questionnaire was administered twice with an interval of 10 days to the same set of teachers. On the basis of the two sets of scores, item analysis was

conducted and the questionnaire was modified. To test the validity, the questionnaire was discussed with experts in the field of educational research.

The questionnaire was rearranged into four sections. Section A contained 15 items meant for measuring the attitude of teachers towards work experience and art education, Section B contained 12 items meant for measuring knowledge about the incorporation of work experience and art education with other subjects. Section C contained 12 items relating to the social awareness of the teachers and Section D contained 11 items to find out the knowledge of the evaluation system to be followed in work experience and art education. The statements were rated on a three-point scale ranging from disagree to agree for positive items and vice-versa for negative items for the purpose of statistical analysis.

Analysis of Data

Table 1 shows the significant difference between the teachers who had undergone the training programme and those who had not undergone the training programme.

From Table 1, it is clear that the primary school teachers who had undergone the training programme and the teachers who had not undergone the training programme significantly differ at .01 and .05 level of significance with respect to the attitude of teachers regarding work experience and art education, social awareness, incorporation of work experience and art education with other subjects and the evaluation system.

TABLE 1

Variables	Teachers who had undergone the training programme			Teachers who had not undergone the training programme			t value	Significant or Not Significant
	Sample Size	Mean	S. D	Sample Size	Mean	S. D.		
Attitude	151	16.96	2.11	200	24 64	3.47	7 77	S
Social Awareness	151	21.58	2 16	200	18 80	2.46	11.26	S
Incorporation with Other Subjects	151	22 78	1.67	200	20 55	20.53	9.92	S
Evaluation System	151	18.60	2.16	200	16.48	2.63	8 28	S

Whether there is significant difference between men and women, urban and rural, government and private primary school teachers who had undergone the training programme can be gauged from Table 2.

Thus we see that there is no significant difference at .01 and .05 level of

knowledge about the incorporation of work experience and art education with other subjects.

● The Primary teachers who had undergone the training programme have increased their knowledge about the evaluation system of work

TABLE 2

Category	Sample Size	Mean	S.D.	t Value	Significant or Not Significant
Men	59	89 68	4 92	0.38	N S
Women	92	90 00	5 25		
Urban	78	89,83	5 26	0 17	N. S
Rural	73	89 97	5 03		
Government	75	88,90	4.89	0 14	N. S
Private	76	89 89	5.39		

significance among men and women, rural and urban, government and private primary school teachers.

Major Findings

● There is a change in the attitude towards work experience and art education among the primary school teachers who had undergone the in-service training programme.

● There is a change in the social awareness of the primary school teachers who had undergone the training programme.

● The teachers who had undergone the training programme have acquired

experience and art education.

● The impact of the training programme over male and female primary school teachers is found to be the same.

● The impact of the training programme over the primary school teachers of urban and rural areas is found to be the same.

● The impact of the training programme over the government and private primary school teachers is found to be the same.

In most of the primary schools there are no separate teachers to teach work

experience and art education exclusively. Many teachers utilize the period meant for these subjects to teach subjects like mathematics, science, languages or social science, for which the children have to take external examination. The parents also do not take interest in their children learning work experience and art education.

The effective implementation of any educational programme depends upon well-trained teachers. The in-service programmes in work experience and art education aim at stimulating the teachers to teach these subjects sincerely. Through in-service program-mes they can gain more knowledge in the subject and know the importance of the subject in the school curriculum. The in-service programme motivates the teachers to contact the parents in order to make them understand the importance of the subject.

At present the District Institute of Education and Training gives importance to the conduct of in-service programmes in subjects like mathematics, science, language, etc. It is imperative on the part of the DIET centres to come forward and conduct frequent in-service programmes in work experience and art education to enable the teachers to take interest in the all-round development of the personality of the children.

Suitability of Content of Textbooks for Primary Classes in Relation to Environmental Awareness

Teachers' Opinion

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WORLD educators and environment specialists have repeatedly pointed out that any solution to the environmental crisis will require environmental awareness and understanding to be deeply rooted in the educational system at all levels. Global activities in the field of Environmental Education (EE) took concrete shape in the early seventies through various international consultations and conferences. Thanks to the efforts of UNESCO, UNEP and International Environmental Education Programme (IEEP), Environmental

The main focus of the study was to seek the opinion of primary school teachers about the suitability of the content of textbooks prescribed by different boards of school education for primary classes in relation to environmental awareness. An opinionnaire was administered to collect the data. The results in the form of percentages showed that teachers were not fully satisfied with the illustrations and exercises given in the books, but more than 50 per cent teachers expressed their satisfaction regarding the selection, organization and explanation of the content of the books in relation to environmental awareness.

Education has been incorporated as an important component in the curricular subjects at elementary, secondary and tertiary educational levels, both formal as well as non-formal, in all the countries.

For the people of India environmental conservation is not a new concept. The Indian tradition of love, respect and reverence for nature goes back to time immemorial. Historically, the protection of nature and wildlife formed an ardent article of faith, reflected in the daily lives of the people and also enshrined in myths, folklore, religion, art and culture, but India has always tried to keep pace with world trends in Environmental Education. In the current curricula and textbooks developed according to the directive of NPE (1986), Ministry of Human Resource Development *Annual Report* (1993-94) prescribes environmental protection and conservation of natural resources as main elements of the National Curriculum Framework. A centrally sponsored scheme 'Environmental Orientation to School Education' was initiated in 1988-89. States and Union Territories are provided assistance under the scheme for undertaking various activities on the project. The project activities include review and development of curricula of various disciplines at primary, upper primary, secondary and senior secondary levels with a view to infusing environmental concepts therein, reviewing and developing textbooks of environmental studies at primary and upper primary levels, developing teaching-learning material, etc.

It is clear that the issue is not whether EE should form an essential component of education, the issue is how to do it effectively. 'School Curriculum as the Vehicle of Social Change' in the NCERT document, *National Curriculum for Elementary and Secondary Education, 1988* has visualized the school curriculum as a vehicle for social change. One of the major variables that conditions and controls the quality of school education is the quality of textbooks. The process of education in most of the schools in India and even abroad, can be summed up in one phrase—as the textbook so the teaching-learning. The textbook plays a crucial role in generating educative interactions in the classroom between teacher and learner. The textbook is also used for self learning by the individual student either in the classroom or at home. The textbook assumes a place of paramount importance in the field of formal education. Having recognized this fact NCERT has undertaken several programmes to improve the quaity of school textbooks. This particular educational research area needs to be intensified and the whole education pattern should be environment oriented, which requires innovative and holistic approaches — we should think globally and act locally Therefore, the researcher felt the need for evaluation of textbooks prescribed by different boards, in the perspective of environmental awareness at the primary level. Hence the opinion of teachers was considered the best judgment about the textbooks.

Objectives

1 To study the opinion of teachers about the suitability of the content of textbooks prescribed by different boards of school education for primary classes in relation to environmental awareness

2 Board-wise comparative study of the opinion of teachers about the suitability of content of textbooks prescribed by different boards of school education for primary classes in relation to environmental awareness.

3. Sex-wise comparative study of the opinion of teachers about the suitability of content of text-books prescribed by different boards of school education for primary classes in relation to environmental awareness.

Method

Tool

An opinionnaire was used to collect the data. It consisted of five sections and a total of 30 items — section of content (8), organization of content (7), explanations (5), illustrations (5), and exercises (5).

Procedure

The opinionnaire was administered on 165 primary school teachers to collect opinion regarding relevance of content of prescribed textbooks in relation to environmental concepts. For clarification and right judgment, environmental concepts were explained and illustrated as follows.

(i)
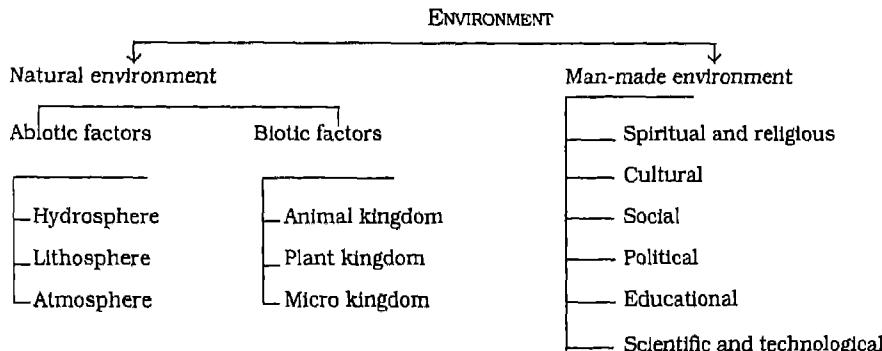
(ii) Eco-system: inter-relationship of abiotic and biotic factors

(iii) Pollution: air, water, soil and sound contamination

Result and Discussions

Table 1 reveals that more than 50 per cent teachers have expressed their opinion in a positive manner about the selection of content (57 per cent), organization of content and explanations (59 per cent), illustrations (53 per cent), and exercises (52 per cent) given in the

books of different subjects and of different classes but a clear-cut conclusion in favour of the suitability of the books in relation to environmental concepts cannot be drawn because there was no polarization of opinion and the results were little more than average.

the textbooks or they did not pay attention towards the objective of the opinnionaire. Hence, it cannot be generalized that the books prescribed by the different boards are up to the mark for the development of environmental awareness among primary school children.

TABLE 1
Percentage of 'Yes' Responses of Teachers (N-165) on Each Part of Opinionnaire

S. No.	Parts of Opinionnaire	Percentage of 'Yes' Responses
1.	Selection of content	57
2	Organization of content	59
3	Explanations	59
4.	Illustrations	53
5	Exercises	52

A comprative view of the opinion of teachers of different boards is given in Table 2. Teachers' agreement in percentages shows very little difference in each part of the opinionnaire among the three boards. By observing this consistency in opinion, it appears that either the teachers were reluctant in expressing their views openly about the content of

A comparison between male and female teachers' opinion regarding each part of the opinionnaire has been shown in Table 3, which gives a clear indication that female teachers had a more favourable opinion than male teachers regarding the content of the textbooks. Male teachers were of the opinion that more concepts should be added to the

TABLE 2
Board-wise percentage of 'Yes' Responses of Teachers (N-165) on Each Part of Opinionnaire

S. No.	Parts of Opinionnaire		Percentage of 'Yes' Responses	
		UP Board	CBSE Board	ICSE Board
1.	Selection of content	54	59	58
2	Organization of content	57	59	61
3.	Explanations	56	57	58
4	Illustrations	52	54	55
5.	Exercises	50	53	52

TABLE 3
Sex-wise Percentage of 'Yes' Responses of Teachers (N-165)
on Each Part of Opinionnaire

S. No	Parts of Opinionnaire	Percentage of 'Yes' Responses	
		Male	Female
1.	Selection of content	55	59
2	Organization of content	57	60
3.	Explanations	58	61
4	Illustrations	52	50
5.	Exercises	51	53

content to make the subject matter clear. This difference may be due to the difference in thinking of male and female teachers.

The organization part reflects the better opinion of female teachers, which may also be due to the lack of clear perceptions in the subject matter. According to the male teachers the subject matter needed to be environmentally organized to develop environmental awarness. Hence, the male teachers were not satisfied with the organization of content.

As far as the explanation in the books was concerned, female teachers expressed their satisfaction but male teachers did not find the explanations up to the mark. It is a common complaint of teachers that the explanations given in books are not according to the mental level and interests of the children.

On the illustrations and exercises given in the textbooks, both the groups of teachers expressed their dissatisfaction. It has also been observed that the illustrations in the books are neither appropriate nor clear.

In a book all the five components mentioned above are very important in catering to the needs of children as well as in achieving specific objectives. A little dissatisfaction about the content of the books of primary classes has been expressed by male and female teachers. Hence it can be concluded that male and female teachers want some modifications in the books in relation to environmental concepts and have submitted some suggestions — recent information regarding major environmental issues should occupy a place in the curriculum or syllabus of primary classes in a very simple manner considering the capabilities of children; illustrations, figures and exercises should be based on realistic situations. Selection, organization, explanations, illustrations, exercises in textbooks should provide more opportunities for the use of environmental knowledge in practical life.

Why the Children of the Poor
Do Not Attend School

V Nath
New Delhi

THE urban and rural poor realize the value of education for their children. It is not uncommon to hear from a domestic servant in Delhi that he or she is sending two or three children to school because education is so important for the children's future. It will provide them an opportunity to rise up from domestic services to work as a skilled or white collar worker.

But the cost of sending a child to primary school is so high! Most people of the middle income group send their children to public schools run by profit-making or non-profit-making institutions because the schools run by the municipal corporation are so poor. A large proportion of them are run in tents because there is no school building and teaching equipment starting with the blackboards are missing. Consequently, no middle income couple would even think of sending their child to a school run by the corporation.

In one of the prestigious public schools located in South Delhi, the quarterly fee is Rs. 8,000 for primary school children. In addition, the school obtains a 'donation' of Rs. 100,000 at the time of admission of the child to the kindergarten class. The 'donation' itself has gone up from Rs. 25,000 since the school was established four years ago. Yet the school

> *The cost of education is so high that poor parents cannot dream of sending their children to private schools. They cannot even afford to send their children to government schools, When they are struggling to get a square meal, withdrawal of their children from the workforce and even the least amount charged by schools, can endanger their survival. Their povery stricken life itself is an answer to the question why poor parents do not send their children to school.*

is run by a non profit institution. Then, there are costs of the school uniform, textbooks and exercise books and last but not the least, the monthly fare on the school bus. All these expenses make a big hole in the budget of a couple of the middle income group. But they incur the expenditure because they see no alternative to it.

- When I see a six year old carrying a load of books and exercise books on his or her back, I begin to reflect how things have changed since I went to a primary school in Lahore (now in Pakistan) during 1929-33. The school was the primary school branch of one of the best schools in Lahore. Yet the monthly fee was perhaps Rs. 0.25. The maximum fee that I ever paid was Rs 12 per month when I studied for my B.A. degree at the Government College, the most prestigious and expensive college in Punjab.

There was no expense on the school uniform because there was none. We were expected to dress simply and neatly. Furthermore, there was no expense on exercise books and very little on text-books. To learn to write Hindi or Urdu, we wrote with a reed pen on a wooden board with a handle on top, which was called *takhti*. It was plastered on both sides with a yellow clay paste before we could write on it with a reed pen which cost not more than one paise (when 64 paise made a rupee).

Arithmetic sums were done by writing on a 9" x 12" piece of slate, with a small 3-4 inch stick of clay designed especially for writing on the slate. The writing would be rubbed off with a piece of sponge after the teacher had seen the sums and corrected the mistakes.

The total cost of the *takhti*, the slate the reed pen and clay stick was a few paise. There were no school buses in those days because even high schools were within walking distance.

There was hardly any expense on textbooks For the first grade, we had a thin primer for learning to read and write and another for learning numerals and addition and subtraction.

The total monthly expense of sending a child to primary school was less than a rupee Even if we assume that the rupee of the 1930s bought what 100 rupees buy today, the total cost of sending a child to school was a fraction of what it is today.

Yet the quality of instruction was first rate. One of the best teachers that I have ever had was the teacher in the primary school He was devoted to his job and although he would give us a slap occasionally, he would never hurt. He taught us the value of neatness, punctuality and honesty in personal conduct.

His monthly salary would have been barely adequate to maintain his family in modest comfort. But he was content! Teachers taking private tuitions was unknown and was considered unworthy of a teacher. Today, however, I find that the seven-year-old second grade son of our house-maid making an income of about Rs. 5000 has a private tutor. I wonder why! Does the school not teach him enough. Yet it is a good school. It is

run by a non-profit institution which runs dozens of primary schools, several high schools and a college in Delhi.

There are several reasons why the urban poor do not send their children to primary schools. Children work as beggars or domestic servants and thus make a small contribution to the family income. A nine- or ten-year-old girl takes care of her younger siblings when the mother goes to work.

An important reason is also that the cost of sending a child to school, even the municipal primary schools, where the cost is minimal, is so high that the poor do not send their children to school or have them drop out after one or two years Can something not be done to reduce the cost?

Tons are written on why after 50 years of independence, India has not been able to provide literacy for all and why a large proportion of the children in several states do not attend primary school or drop out after one or two years. However, little is said about the cost of sending a child to school.

As a first step towards reducing the cost would some educational *pundit* think about a return to the *takhti* and the slate. It is not such a bad idea!

Some years ago, a request by the State Government of Delhi to managements of private schools to see if they could not reduce their fees caused such a furore that the Government hastily withdrew the request. The managements of the schools argued that they have to incur heavy expenditure on maintenance of the school buildings, and acquiring and maintaining furniture and equipment. Not a word was said about the profit made by the managements of many schools.

A Word about the Curriculum

In the 1930's emphasis in the school curriculum was on learning the three R's. A student, whose handwriting was neat or beautiful and who made few spelling mistakes, was admired. For developing proficiency in arithmetic, the last period in the school day was devoted to group chanting of multiplication tables. The practice is much criticized, but its advantage was that after learning the tables thoroughly one made few mistakes in arithmetic.

Today the primary school curriculum includes, besides the 3 R's, information on a number of subjects including personal hygiene and minimizing pollution of air and water. Little do the curriculum planners realize that the brain of the 5-10-year-old child is equipped for receiving information only on a limited number of subjects. Teach him or her the 3 R's thoroughly. They can pick up information from other sources—parents, children's story books and last but not least, the television.

The Effect of Early Childhood Education on Enrolment, Retention and Achievement in Primary Schools

A Study

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EARLY Childhood Education (ECE) basically aims for overall development of children and promotion of enrolment and retention in the primary school. Though since 1984 the need for ECE was highlighted, only in 1986 was it introduced by the National Policy of Education (NPE). The present study delves into its development, problems, progress, impact, etc. to enhance the activities of the ECE centres (Anganwadi and Balwadi) to promote primary education, because the centres are acting as a bridge in bringing children into primary schools by developing a readiness attitude towards learning.

The present study pertains to the effectiveness of Early Childhood Education on enrolment, retention and achievement in primary schools in Tamil Nadu. Based on the study recommendations are also formulated in the form of suggestions.

There are 65 Balwadi centres in Perundurai range. The present study aims to evaluate the effectiveness of the ECE programme on enrolment, retention and achievement in primary schools.

TABLE 1
Anganwadi Centres in Erode District

S No	Taluks	Ranges/Blocks	Total
1	Erode	Erode, Modakurichi, Kodumudi	3
2	Perundurai	Uthukuli, Perundurai, Chennimalai	3
3	Gobi	Nambiyur, Gobi, T. N Palayam	3
4	Sathi	Sathi, Thalavadi, Anthiyur	3
5	Bhavani	Ammapet, Bhavani, Bhavani Sagar	3
6.	Dharapuram	Dharapuram, Kundadum, Moolanur	3
7	Kangayam	Kangayam, Vellakovil	2
		TOTAL	20

Objectives

1. To find out the enrolment, retention and achievement

2. To trace the students' continuous stay from Balwadi to the formal school system

3. To bring out the differences in retention between the ECE and non-ECE children

4. To find out the variations in enrolment, retention and achievement during 1995-99, 1996-99 and 1997-99.

5. To infer the socio-economic status (SES) of the parents

6. To study the enrolment, retention and achievement se wise

Hypotheses

1. Enrolment of ECE children is high than the non-ECE children

2. Enrolment of boys is higher than the enrolment of girls.

3. Drop-out rate of the ECE children is less than the non-ECE children.

4. Drop-out rate of girls is higher than the drop-out rate of boys.

5. Percentage of retention of ECE children is higher than that of non-ECE children.

6. Percentage of retention of girls is lesser than that of boys.

7. The impact of pre-school training is more effective in increasing the percentage of enrolment and retention and in decreasing the drop-out rate.

Limitation of the Study

The sample is restricted to the selected schools of Perundurai range in Erode district.

Methodology

Design of the Study

chapter deals with the sampling , the tools and methods employed collection, the variables studied ethod of analysis of data.

Sample

There are 20 ranges in Erode district Out of this 20, only Perundurai rang which has 65 centres and spreads over the range, was selected for a detailed study All the 65 centres were taken for the study.

Tools Used

The present study utilizes the secondary and primary data, i.e. the office records and the interview schedule. The investigators and the D T.E. students visited and met all the AWW's (Anganwadi workers) and Headmasters to obtain the data pertaining to t study and also to closely observe activities of these centres.

Tabulation and Analysis

The collected data are classified and presente 1 in five different tables. As per the objec 'ves, the enrolment, retention, achievement a ' drop out details are pr iented and dated in separate ti es.

Table 2 exhibits the enrolment of children in Standard I in ECE and non-ECE categories of 1995-96, 1996-97 and 1997-' academic years.

TABLE 2
Enrolment

Status of Children	Standard I (1995-96)		Standard I (1996-97)		Standard I (1997-98)	
	B	G	B	G	B	G
ECE	340	342	402	390	376	375
Non-ECE	337	306	285	257	330	307

TABLE 3
Percentage of Enrolment (1995—1998)

| Status of Childr		Standard I (1995-96)	Standard I (1996-97)	Standard I (1997-98)
	Boys	50 22	58 50	53 25
	Girls	2 77	60 27	54 98
E(	oys	77	41 48	46 74
	Girls	2	39 72	45.01
TOT			59 38	54 11
	G		40.60	45 87

Percentage of Enrolment

Comparison of ECE and Non-ECE
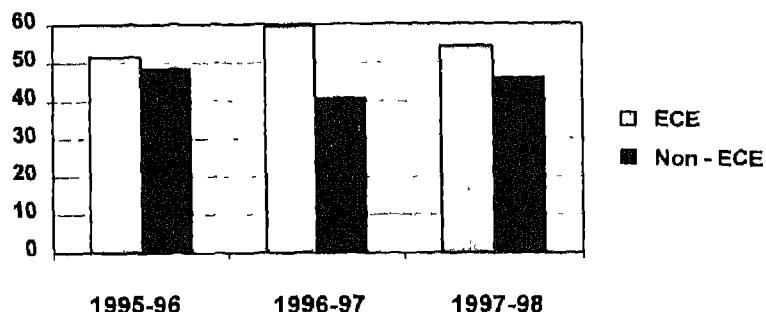
Percentage of Enrolment

Comparison of (ECE) Boys and Girls
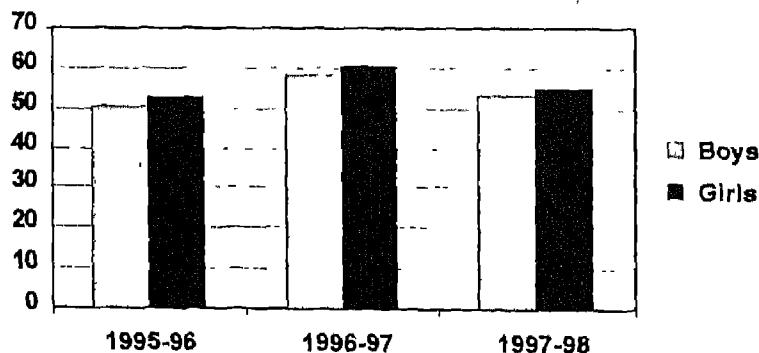
Percentage of Enrolment

Comparison of (Non-ECE) Boys and Girls
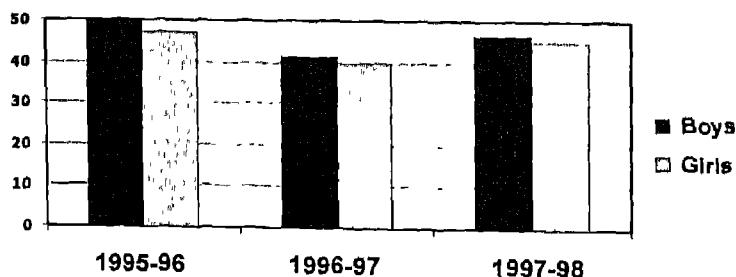
The preceding tables and charts express the enrolment figures of children in percentage. Understandably, the ECE enrolment figure of girls shows higher than that of the boys in all the three academic years. Whereas the non-ECE category shows just the opposite — boys' enrolment figures higher than that of the girls. The ECE centres are playing a vital role in roping in girls to the educational system.

Table 4 indicates variation of retention and drop-out rates in Standards I, II, III and IV of the same set of students from 1995-99. Though there is high drop-out rate in the beginning (1995-96) in the subsequent years, the drop-out rates are steadily decreasing. This is an encouraging phenomenon of the effectiveness of ECE centres.

Table 5 indicates the variation of retention and drop-out rates in Standards I, II, III of the same set of students from 1996 to 99. The figures shown in the table, especially the drop-out percentage, reflect the paramount role played by the ECE centres in minimizing the rate of drop-out.

TABLE 4
Percentage of Retention and Drop-outs (1995-99)

Percentage of Retention

Status of Children	Standard I (1995-96)		Standard II (1996-97)		Standard III (1997-98)		Standard IV (1998-99)	
	B	G	B	G	B	G	B	G
ECE	81	90	94	93	96	93	94	93
Non-ECE	89	82	90	82	82	92	93	94
Percentage of Drop-outs								
ECE	19	10	6	7	4	7	˙6	7
Non-ECE	11	18	10	12	18	8	7	6

TABLE 5
Percentage of Retention and Drop-outs (1996-99)

Percentage of Retention

Status of Children	Standard I 1996-97		Standard II 1997-98		Standard III 1998-99	
	B	G	B	G	B	G
ECE	91.8	91.3	91.37	88.86	93.17	90.00
Non-ECE	84.57	89.11	90.81	89.71	95.08	95.78
Percentage of Drop-outs						
ECE	8.2	8 7	8.63	11.14	6.83	10.0
Non-ECE	15.43	10.89	9.39	10.29	4.94	4.22

The Effect of Early Childhood Education

TABLE 6

Percentage of Retention

Status of Children	Standard I 1997-98		Standard II 1998-99	
	B	G	B	G
ECE	87.77	89.07	92.09	91.15
Non-ECE	78.79	82.08	89.45	94 14
Percentage of Drop-outs				
ECE	12.23	10 93	7.91	8.85
Non-ECE	21.21	17 92	10 55	5 86

The above table indicates the variation of retention and dropout rates in Standards I and II of the same set of students from 1997 to 1999. Here also, the drop-out rates of children from ECE centres are very low when compared to the non-ECE sector

TABLE 7

Percentage of Retention

	Enrolment in 1995 (1995-1999)	Enrolment in1996 (1996-1999)	Enrolment 1997 (1997-1999)
ECE	92	91.09	90.02
Non-ECE	88	90.80	86.11

Legend:
- Enrolment in 1995 (1995-99)
- Enrolment in 1996 (1996-99)
- Enrolment in 1997 (1997-99)
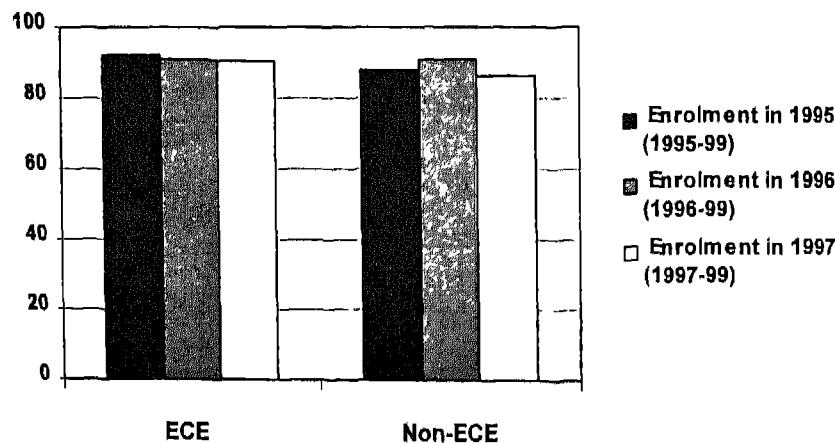
TABLE 8

ECE	8	8 91	9 98
Non-ECE	12	9.2	13.89
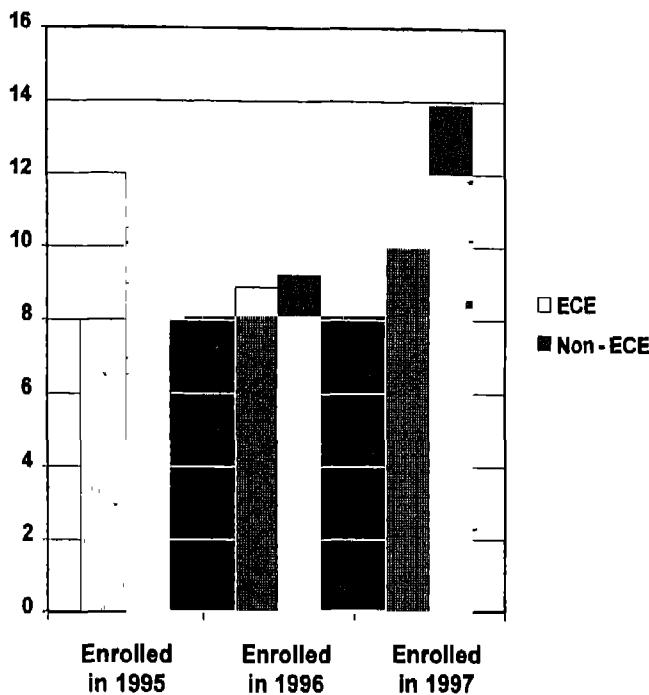
Obviously, this achievement of ECE can be attributed to the effective role of the centres. More specifically, we can say the ECE centres are acting as a linkage in passing on the children to the formal school system.

Finally, when we compare the tables (from Table 4 to Table 8) we find that the achievement rate is always high in the case of ECE centres. This clearly emphasizes the effective role of ECE centres in achieving the goal and underlines the importance of such centres in increasing the literacy rates.

TABLE 9
Educational Status of Parents

	Male		Female	
No Schooling	368	30.13%	598	49.29%
Primary	403	33%	341	28 11%
Middle	199	16 29%	148	12.2%
S.S.LC.	143	11.71%	81	6.67%
Hr Sec.	79	6.47%	35	2.88%
Degree	29	2 37%	10	0.82%

The above table shows the educational status of the parents. Nearly around 65 per cent of the parents have studied not even upto Standard VIII and, deplorably, nearly 50 per cent of the mothers are illiterate.

As per Table 10 nearly 50 per cent of the parents are engaged as coolies. The lowest percentage is shown by government employees.

TABLE 10
Occupation of Parents

	Male		Female	
Coolies	582	47.66%	457	37 67%
Agriculture	157	12.85%	82	6.76%
Govt employee	102	8.35%	19	1.56%
Business	180	14.74%	87	7 17%
Others	200	16 38%	185	15.25%
No occupation	Nil		383	31.5%
	1221		1213	

TABLE 11
Annual Income

Income in Rs.	Male		Female	
More than 12000	462	47.83%	47	3.87%
6000–12000	540	44.22%	357	29.43%
Less than 6000	219	17.93%	809	66.69%
TOTAL	1221		1213	

Table 11 gives a picture of the income status of the parents. Nearly 45 per cent of the parents are in the income group Rs. 6,000–12,000. Nearly 40 per cent of the parents come under the income group of above 12,000. In this group, the bread-winners are mostly male. But in the other two categories, females also take part in generating income for the family. Astonishingly, in the less than Rs. 6000 income group, more females are engaged in the earning process than their male partners.

Findings

1. Percentage of enrolment of ECE children is 55, while that of others is 45.

2. The enrolment of girls is more than that of boys in all the years taken for the study.

3. It is found that every year not only do the drop-out rates fall, but the enrolment of ECE children is also encouragingly high. This is due to the impact of pre-school training to get into the regular school system.

4. Average percentage of retention of ECE children is 91.75 and of non-ECE children 88.

5. Retention percentage of ECE female children is higher than that of non-ECE girls.

6. Sixty-five per cent of the parents have studied barely upto Standard VIII.

7. Fifty per cent of the mothers are illiterate.

8. Fifty per cent of the parents are engaged as coolies.

9. Forty-five percent of the parents' income is between Rs 6000–12,000.

10. In the lower income group more females are engaged in the earning process.

11. Eighty per cent of the withdrawals are due to parents leaving their homes in search of other occupations.

Recommendations

1 Schools must be made more attractive to children, so as to have higher enrolment and retention.

1 More training programmes and assistance to be given to the AWW to enhance their activities to make the centres more dynamic so that more children enrol.

1 Primary teachers must be trained in new methods of teaching to hold the children in the classrooms.

1 Primary teachers must be exposed often to the national educational objectives.

1 Every AWW centre may be asked to maintain a register tracking the ECE children until they complete Standard V.

1 Every primary school may be asked to maintain registers regarding children joining from AWW centres.

Though the cry of the hour is for total literacy the participating agencies are

not only insufficient but also, the effectiveness of such agencies in attaining this goal is not highly encouraging. Hence more agencies and organizations should be linked to the system. Above all, it is very essential to do more research and field-work to find out the various ways to improve the quality of work and to find solutions to problems encountered by the centres at large.

Creativity at the Primary Stage

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A child is given a pencil and a piece of paper filled with thirty-six circles and asked to see how many things she can make out of the circles. When a Class II girl was told she had only ten counts left to complete the test she still had two rows of unused circles. She immediately drew a girl blowing bubbles with the unused circles as the bubbles.

> *Every child is born creative. The need is to nourish or facilitate his/ her creativity. The monotonous life caused by excessive classroom teaching-learning should be replaced by sports, cultural activites and outings. Let the child observe the natural phenomena, the natural laws and develop the power of observation and imagination.*

An empty tin that comes rolling towards a child or rolls away stimulates the child to gurglish delight while instinctively feeling a different experience and forming a mental impression of sound and sense. A child starts chewing or blowing a reed and sways to its shifty rhythm enjoying every moment of the experience.

All these facets of thinking are characteristic of creative children.

Creativity is important in everyday life.

A teacher at the primary level has to be alert about creativity in children's behaviour. She observes the child at work and play and tries to detect any newness in its interaction and presentation.

It has been observed that a classroom session always suffocates the mental ability of a child. The monotonous reading and drilling saps the creativity and makes the child in the pre-operational stage dull. An outing to the school garden or the school playground is a change that is looked forward to. In the garden the boys always look for a stray ball or marble hidden in the bushes; they try to move the small twigs in a nest to see if there is an egg lying there. The girls immediately start plucking flowers, dusting off each other's

uniform. A teacher facilitates the togetherness cleverly for the children to experience social factors. A blade of grass with a small butterfly is exchanged for a dotted ladybird. A lame squirrel with the tail cut off arouses in them the wonders of life and death. It is their exclusive perception. The children gain a mental image of a concept which will then relate to formal teaching at a later stage. The children get back to the class with their treasures, lay them out on their small tables which one feels need to be 'insured'. They learn to barter without being taught. A clever teacher helps in this 'active learning' where the child interacts with an exhibit. The child is able to express ideas and concepts in words. One has only to observe the flaying of hands and small fingers counting the gains while understanding the losses. At this stage itself the children communicate clearly. That learning is best which involves saying, hearing and 'seeing' words heard in a conversation at home, in school or in the 'idiot box'. Amongst themselves the children are quite disciplined in their 'arguments'. They share a rapport which leads to social skills. Experience in the formative years counts a lot. All children do have intuitive ideas about how the world works. They work according to their natural tendencies. Actually this is the child's lesson to humanity and the process of learning to learn.

Every teacher in the primary section should realize there are four successive stages that are a child's principle means of knowing his environment. Piaget has identified them as

- Sensory–Motor Stage   0–2 years
- Pre-operational Stage   3–8 years
- Concrete Operational   9–12 years Stage
- Stage of Formal   13–14 years Operations

The Pre-operational Stage is the stage of wonderland—to see the seed germinating in wet cotton is the child's birthright. To see the eggs lying in the nest is his/her birthright. To count the kittens in the cowshed is the child's right. Even to nail a calendar in the house is the child's right. The facilitator has aroused and sustained the curiosity.

An indifferent teacher can mar the creative moment by asking a hackneyed question—"Are you happy?" Instead, the teacher can get involved with the group of children and ask each one, "What is happiness?" The teacher has a personal commitment towards her/his class. Encouraging them to communicate and work with others should be a natural priority. It is also essential to help the children cultivate human qualities from childhood itself to participate in social activities such as sports or cultural activities.

Every child is an exceptional individual so, it is important to provide children in their formative years with every possible opportunity for discovery and experimentation—aesthetic, artistic, cultural and social—right from the age of three or four. The Pre-operational Stage should be the focus of teachers' and parents' attention particularly in the early years at home and at school.

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